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ORIGINAL COMMUNICATIONS.

(Original Communications are received with the understanding)
(that they are contributed exclusively to THE LARYNGOSCOPE.)

PAPILLOMA OF THE NOSE.*

DR. JAMES G. CALLISON, New York.

In standard works on pathology papilloma is not mentioned as occurring in the nose. Text-books on nose and throat simply mention the condition among new growths. In Wright and Smith's recent work on "Diseases of the Nose and Throat" the statement is made that less than fifty authentic cases have been reported in medical literature. They say: "True papilloma is usually situated on the septum just behind the columna, when it is usually of the hard variety, or farther back on the septal mucosa, where its papillary excrescences are apt to be more marked. It is also seen on the floor or in the vestibule. True papilloma is rarely seen on the turbinated bones, and papillary hypertrophy or papillary adenoma is rarely seen on the nasal septum; hence, given a papillary tumor of the nose, its situation is the chief moment in its gross differential diagnosis; but the gross appearances of the three varieties of papillary growths are often identical, and the microscope is necessary in final solution of the histogenesis of such an appearance."

Being fortunate enough to encounter a true papilloma, or papillary fibroid, of this rarest variety, one springing from the region of the middle turbinate, bulla and infundibulum, the case seems worth reporting.

The patient, Mrs. H. A. V., colored, age 40, family and personal history negative, was first seen on September 14, 1915. The

*Read before the New York Academy of Medicine, Section on Laryngology and Rhinology, Oct. 27, 1915.

present trouble began about twelve years ago, in the third or fourth month of pregnancy, with rather sudden nasal obstruction. This continued about four years, when she visited Dr. Frederick J. McKechnie, who, on October 6, 1907, removed a growth from the left nostril, and on October 22 again removed a small polypoid growth. These operations gave relief at the time, but the obstruction soon recurred. Nothing further was done until I saw her on the above date. The patient feels, however, that the bridge of the nose has been growing wider of late years.

On examination I found the right nostril practically occluded by hypertrophic rhinitis. The left was filled with a new growth

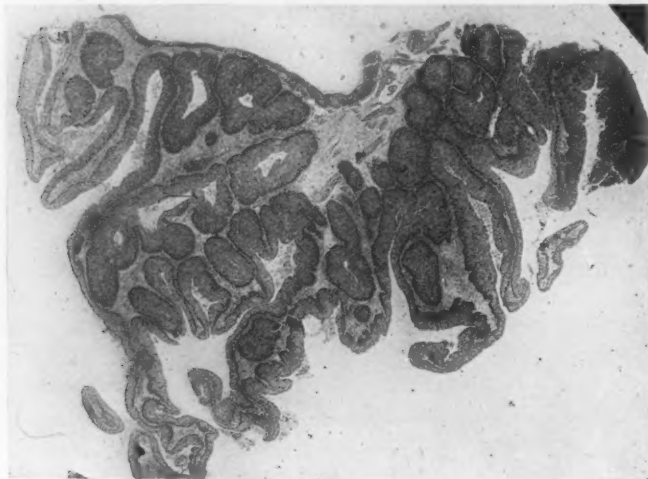


Fig. 1. X15. Showing gross histologic appearance of the growth.

presenting within a quarter of an inch of the anterior nasal opening. In appearance it was dried, wrinkled, and of a dark color. Posterior rhinoscopy showed a growth extending into the nasopharynx, completely filling the nasopharyngeal orifice and spreading out so as to obstruct the view of the septum. It was convoluted, white and boggy in appearance and covered with mucopus. The nasal cavity was so completely filled with the growth that it was impossible to determine its origin.

The symptoms complained of were those of nasal obstruction. On September 17 an attempt was made to remove the growth with

a snare, but it was so tightly packed in the nose, engagement was difficult and I resorted to a biting forceps. The tumor being very friable, its removal in this way was easy, 24 grams of tumor mass being removed from the left nasal cavity. Finding its origin from the lower border and external surface of the middle turbinate, the bulla and infundibulum, and believing that I was dealing with a polypoid growth, I also removed the anterior end of the middle turbinate to facilitate drainage. However, as is my routine with all growths removed from the nose, I made a microscopic examination of the tissue and found a papilloma of the type shown in the microphotographs.

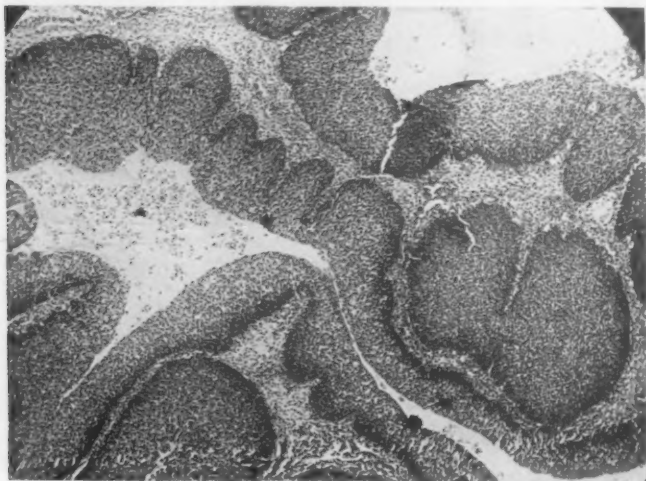


Fig. 2. X100. Same as figure 1, but under higher magnification.

Having determined that the growth was papillomatous rather than a polyp, involvement of the antrum seemed probable. This was irrigated through a cannula and a considerable quantity of pus washed away. On this evidence of antrum involvement the patient was submitted for an x-ray photograph. This shows some increase in the shadows of the frontal and ethmoid sinus, with a very heavy shadow over the left antrum, confirming the other evidence of its involvement. Repeated washings of the antrum soon showed it free of pus.

Since operation the field has been kept clean and allowed to heal. The stump of the tumor remaining is showing rapid growth.

Anterior rhinoscopy at this time shows the healed end of the middle turbinate with the new growth springing from its lower margin and external surface. Examination with a probe, however, shows an origin more extensive than this.

In a personal communication Dr. McKechnie says: "I remember the case. On October 6, 1907, I removed polypi from the left nostril; again on October 22, the record reads, removed small polypoid growths, left nostril. Evidently I did not remove all at the first operation. Apparently there was nothing at that time to direct my attention to the antrum especially or anything about the polyps to make me suspicious of them and have them examined

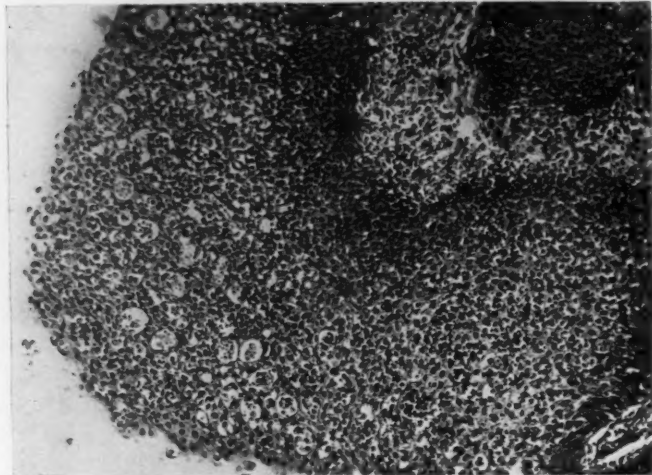


Fig. 3. X250. Showing purulent infiltration of the epithelium, the pus cells in places collecting into groups and forming cyst-like spaces.

microscopically. Nor do I recollect that the growths were particularly large, but large enough to obstruct the naris."

Histologically the growth is not different from other papillary fibroids. The number of layers of epithelium covering the papillae is enormously increased over normal mucous membrane; the papillae are very edematous and contain a large blood vessel in the center of each, with a rich blood supply just under a poorly formed basement membrane. The point of peculiar interest in the histological sections of the tumor is the persistence with which the columnar character of the cells is carried to the surface of the proliferating epithelium. Almost all papillomata spring from

squamous epithelium and in the ever-increasing number of layers with which the papillae are covered this usually is very much flattened toward the surface. Here, however, we are dealing with a papilloma springing from columnar epithelium, and this columnar character is very marked in places along the surface. Other features worth mentioning are the intense purulent infiltration of the epithelium and its absence from the connective tissue stroma, the pus cells in places collecting into groups and forming cyst-like spaces.

As to the prognosis: A history of twelve years of continuous growth makes the danger of malignant change a very real one

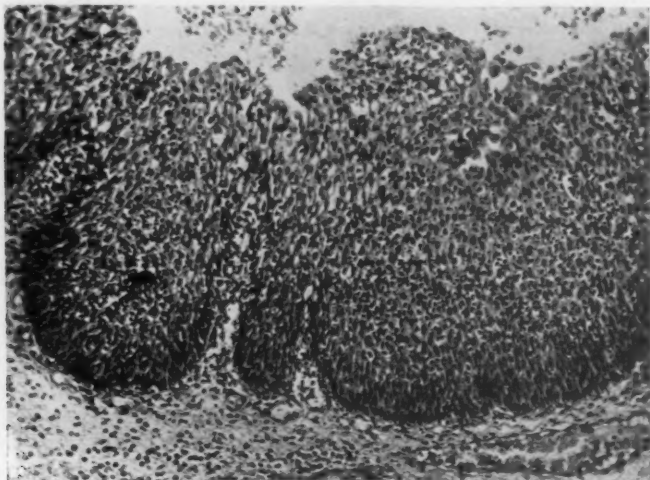


Fig. 4. X250. Showing the columnar character of the epithelium.

unless the base can be entirely eradicated. In a labyrinthine structure such as the lateral wall of the nose this seems hopeless of accomplishment unless radical steps are taken. For this purpose a Caldwell-Luc operation will be performed on the antrum to clear it out. Then a radical Mosher operation will be performed on the ethmoids and frontal to expose the deepest recesses of the mucous membrane that may possibly be involved in the proliferative changes. After this careful cauterization of the tissues with a chemical substance such as trichloroacetic acid would seem to offer some hope of a cure with eradication of the base.

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THE TREATMENT OF DIPHTHERIA OF THE TRACHEO-BRONCHIAL TREE.*

DR. HENRY LOWNDES LYNNAH, New York City.

In tracheo-bronchial diphtheria, the membrane may cause primary stenosis in one of these localities and spread to the other from above downward, and from below upward. In other words, it may occur in the trachea and travel downward, or it may start primarily in the bronchi and travel upward. The membrane may be parietal and occupy only a small portion of the lumen, or it may be in the form of a long ribbon, a cylinder, or a solid cast, partially or completely obstructing the entire respiratory tract.

I am firm in my belief that the great majority of these membranous stenoses travel from below upward, and this statement is borne out by direct laryngeal and bronchoscopic examination on cases recognized prior to the third day of the disease, the larynx not being involved, and diphtheritic membrane encountered only when the lower trachea and bronchi are reached when the foreign body obstruction is plainly visible.

If in all of these cases the membrane started primarily in the larynx we would never fail in our diagnosis, for the constricted cough of the laryngeal type would put us on our guard; but such is not the case in these low membranous types of diphtheria. This condition starting primarily in the bronchi is, I feel, overlooked in many instances, and diagnosed broncho-pneumonia. If one will only bear in mind that there is such a disease as bronchial diphtheria which may be mistaken for broncho-pneumonia, and be constantly on the lookout for the former condition, I can see no reason why any grave error in diagnosis should be made. I wish to make myself perfectly clear on this point, and not lead anyone to believe that I consider all of the secondary and latent pneumonias tracheo-bronchial diphtheria; I am speaking of the primary involvement of the lung, accompanied by marked cyanosis early in the disease, asthmatic dyspnea, and peculiar but constant physical signs distinctive of bronchial obstruction.

Nasal, tonsillar and pharyngeal exudates are absent in many of these cases when the disease has been recognized earlier than the third or fifth day. Culture returns taken from cases without visible exudate on the tonsils or pharynx are invariably negative, for

*Candidate's Thesis to the American Laryngological, Rhinological and Otological Society, Chicago, Ill., June 15 and 16, 1915.

it is impossible by the ordinary methods of taking cultures to reach the site of the local lesion. On the other hand, many cultures may give negative results even when taken through the direct speculum or the bronchoscope. Recently I was called to see a case of low membranous diphtheria of five days' duration. In this case the family physician argued that a series of cultures taken from the throat were negative, and furthermore, there was no exudate on the tonsils, nor was there any nasal discharge. It was next to impossible to convince this physician of the true nature of the disease even when he saw for himself through the direct speculum a mass of membrane. I only mention this specific instance as one of many which occur in practice every day, and also to impress the fact that cultures are of little value in settling the diagnosis. Often too much time is lost as well as the life of the patient, when we delay from day to day by taking cultures rather than admitting the element of doubt and giving a dose of antitoxin.

The clinical picture of a case of trachea-bronchial diphtheria is quite distinctive of this disease. The onset is seldom sudden, and the voice is never lost, and aside from an occasional cough and slight stridor, the condition may be readily overlooked and treated as an ordinary catarrhal cold. An extremely sad example of this occurred in the family of a very reputable surgeon. The child was not at all sick and aside from a slight cough at times had no disturbance whatsoever. There was no rise in temperature, and the unfortunate little patient played with her toys, and was apparently as well and bright as the other children in the family. The father, who is a very close observer, did not consider the condition other than a catarrhal cold, which was only quite natural from the clinical picture. On the fifth day of the disease the stenotic symptoms became marked; the temperature rose to 103° F., accompanied by marked restlessness, cyanosis and irregular pulse; the respirations were labored and asthmatic in character, and there was marked sinking in of the supraclavicular and sternal notches, as well as dipping in of the epigastrium. It was very evident at this date that the condition was one of diphtheria, with which we had to deal. Intubations and antitoxin were of no avail and the child died within a few hours.

I can report a number of cases with similar histories which I think only goes to show how easily these conditions have been overlooked formerly, and there is no doubt that many are still overlooked, unless a cast of membrane is coughed up, or the larynx becomes involved with the typical picture of laryngeal "croup." It is only then that a correct diagnosis is made. There is no doubt

that many of the so-called asthmatic attacks which terminate fatally, are due to diphtheritic bronchial obstruction.

When one is called to see one of these low membranous types of diphtheria, he will readily note the ballooning of the chest, for in these cases there will be marked emphysema of the lung in which the bronchus is obstructed. These foreign bodies seem to act as a valve, and air can enter the lung much more readily than it can make its exit, which accounts for the ballooning of the lung. The type of respiration is decidedly asthmatic, accompanied by early cyanosis and a cough which is seldom of the croupy type unless the larynx has become involved. I have frequently noted only one side of the chest barrel-shaped, and on passing the bronchoscope found only the bronchus on that side obstructed. The barrel chest is especially marked in young children. The respiratory murmur is diminished or absent on the affected side while over the healthy lung the respiratory murmur may be so harsh that it is mistaken for pure bronchial breathing. This is, therefore, another reason why a mistake in diagnosis is made, and the unaffected lung called pneumonic. Dullness is seldom present in these cases, and a hyper-resonant note is the rule, due to the enormous amount of emphysematous lung tissue. The alveoli may be markedly distended at times, and it is not at all uncommon at autopsy to find large air blebs covering the visceral pleurae and the outer surface of the pericardium. Even the pericardial sac may be ballooned with air. At times these blebs rupture into the mediastinal spaces at the root of the lung, and the air following the deep cervical fasciae gets into the subcutaneous cellular tissues and we have a generalized subcutaneous emphysema. Since the advent of direct laryngoscopy and bronchoscopy, many children with foreign body diphtheritic membrane plugging the bronchi have been saved and even those who have fatal termination are treated, however, on definite scientific principles. Any slowly progressive dyspnea should be looked upon with a considerable degree of apprehension and when we are unable to account for the cause of the dyspnea, a bronchoscopic examination should be made. There is little shock accompanying a bronchoscopic examination in these children. I have passed the bronchoscope on a number of cases of pneumonia without untoward effect on these subjects, but I do not profess to make any claim that bronchoscopy will have a beneficial effect in the treatment of pneumonia even if we use suction to remove the ropy mucus which often makes respiration difficult, for the fatal termination of a pneumonia is not due to mechanical obstruction to respiration, but to the failing action of the heart, caused by the profound pneumotoxaemia. In tracheo-

bronchial diphtheria the process is a mechanical obstruction to respiration plus carbonic acid poisoning and diphtheritic toxæmia.

If the heart action is supported in these diphtheritic cases until the mechanical obstruction is removed the outcome of the case is usually favorable. Again, if respiration fail prior to the failing of the heart, the patient can be resuscitated, but if the heart failure precede the respiratory failure there is but little chance of resuscitation. This cardiac and respiratory mechanism I have studied very closely in all intubated cases, especially in the auto-extubation type. In these cases there is marked perichondritis of the cartilages of the larynx, which is the cause of the persistent coughing up of the tube, for the cricoid cartilage having sloughed out can no longer hold the tube in place. These cases give one but little time to deliberate, for the larynx collapses as soon as the tube is coughed out and if no intubator is at hand the termination is usually fatal. Many times the child will be lost if one fights to get the tube introduced while the child is in the death spasm, and the easiest way to handle this condition is to let the patient practically die, and then by rapid intubation and artificial respiration the child will slowly return to life. In all of these cases the heart sounds will be heard with the stethoscope before respiration returns. When the heart sounds are inaudible there is little chance for resuscitation even though the child may inspire once or twice during the artificial manipulation. The identical is true of cardiac and respiratory failure in these diphtheritic bronchial stenoses. The only supportive treatment given, in fact, the only drugs used besides the antitoxin are small doses of morphia, atropia and adrenalin. All of the instrumentation is done without any anesthetic on children as well as adults.

The Physical Signs. The physical signs are of the greatest aid in arriving at a diagnosis. Inspection will invariably reveal a barrel-shaped chest referable to the side on which the bronchus is obstructed, and there will be noted even early in the disease retraction of the sternal notch and sinking in of the epigastrium. Cyanosis of the finger tips is an ever present sign.

Percussion. The signs of atelectasis which are found at autopsy, are usually masked by the surrounding areas of emphysematous lung tissue and there is increased resonance, hyper-resonance, over the entire collapsed area.

Auscultation. The most constant physical signs are, a diminished or absent respiratory murmur over the affected side, in comparison to the rather harsh respiratory murmur over the unaffected lung which may be so marked as to be mistaken for bronchial breathing.

The rales are of the subcrepitant variety, but may also be sibilant and sonorous. When the patient has been intubated with an O'Dwyer tube which is not long enough to give relief, it is best to remove the tube before making a physical examination, for the amount of mucous transmission through the tube will magnify as well as distort all of the physical signs. One of the best and the most accurate auscultatory sign is elicited by placing the bell of the stethoscope firmly on the trachea in the sternal notch with the head well retracted. At this site there are no transmitted rales, and one can often hear a "flip-flop" sound due to a loosened piece of membrane which is blocking respiration. With these physical signs which are fairly constant, accompanied by a peculiar inspiratory-expiratory asthmatic dyspnea I think are the chief indications for bronchoscopic measures.

The differential diagnosis is to be made from broncho-pneumonia, catarrhal bronchitis, foreign bodies and thymic asthma.

From *bronchopneumonia* by the absence of the constricted cough, the different character of the dyspnea, and the physical signs in the chest which differ from bronchial obstruction. The diminished or absent respiratory murmur with a hyper-resonant note over the lung in which there is bronchial obstruction, and the constant and progressive character of the asthmatic dyspnea, are the best guides in making a differential diagnosis. Again, failure to relieve the stenosis by the O'Dwyer tube and the peculiar constricted or rather blocked expiratory cough with the tube in place is indicative of membrane below the tube.

From *foreign bodies* of extremely irritating substances, such as peanut and carrot pulp, the character of the dyspnea and cough is extremely violent and the patient may rapidly become exhausted from the prolonged respiratory effort. The cough reflex is lost in the later stages. The history of aspiration of the foreign body, and the suddenness and extreme severity of the attack are the best aids in arriving at a conclusion.

From *catarrhal bronchitis*, the diagnosis is at times extremely difficult for in many instances the clinical picture in diphtheritic obstruction is one of catarrhal bronchitis at the outset. The involvement in the severe form of bronchitis of the smaller tubes, as seen particularly in measles, is usually bilateral, well marked from the onset, and there are the ever constant sibilant and sonorous rales, and the normal resonance on percussion. The attack is not slowly progressive but well marked from the beginning. At times there may be marked cyanosis and dyspnea, especially in young children.

From *thymic asthma*, by the history of the constant attacks of asthmatic dyspnea, the peculiar conformation of the chest, and the X-ray findings. The treatment of this condition resolves itself into the treatment by intra-muscular and intravenous injections of antitoxin in large doses. I think intravenous injection is contraindicated when the heart action is failing and I have seen fatal results rapidly follow flooding of the circulation by intravenous injection. I have seen several cases of tracheal diphtheria in private practice which were recognized early in the disease all of whom recovered after a dose of 10,000 units of antitoxin subcutaneously. All of these children had parietal casts and intubation was not necessary. There is little or no prostration early in the disease, and post-diphtheritic paralysis is never seen, unless the case is of long standing and the pharynx and tonsils have become involved. Even enormous dosage of antitoxin and mechanical removal of the membrane in the case of long standing is futile, for these patients invariably succumb.

Mechanical removal of the obstructing membrane through the direct laryngeal speculum and bronchoscope is not at all difficult if the case is recognized fairly early, even before antitoxin is given, and is followed by only a small amount of bleeding in comparison, to the rather free hemorrhage when membrane is stripped from the tonsils or pharynx. Formerly I used both forceps and suction but the forceps are of little use as they only remove small pieces of the membrane and naturally prolong the operation. With the small suction tube attached to the small spray and vacuum pump made by Sorensen, of New York City, the membrane is readily removed in long pieces and the bronchoscopic manipulation materially shortened. Made and broken suction with a Potain aspirator is also useful, but is never as satisfactory as the continuous vacuum made by the electric motor. A vacuum of five inches is sufficient to remove all of the membrane and causes little bleeding while an increased vacuum of from fifteen to twenty inches will not only cause considerable bleeding but will nipple the bronchial wall wherever it comes in contact with it by causing too much suction on the mucous membrane.

After the foreign body membrane has been removed the whole of the tracheo-bronchi are sprayed or swabbed by antitoxin locally, followed by intubation with long tracheo-bronchial tubes. These long tubes are introduced with an endeavor to prevent recurrence of the stenosis should the membrane reform, for the membrane in spreading may form about a blood clot and we have as a result

a solid cast; whereas with a tube in place the membrane may form about the tube leaving an open lumen for respiration. I have a specimen removed from an adult at autopsy which was a second cast, the first, a torn cylinder cast, having been coughed up; the second cast was a complete cylinder on the outside, the lumen of which was filled with blood, converting it into a solid cast. The local medication with antitoxin is to prevent the recurrence of the membrane as well as to prevent hemorrhage.

The relief of these tracheal and bronchial stenoses by bronchoscopy is equally as gratifying in results as the relief of the diphtheritic laryngeal stenosis by the intubation tube of Dr. O'Dwyer.

The duration of bronchoscopy for the removal of the membrane should always be considered, and all bronchoscopists will do well to follow the dictum of Dr. Chevalier Jackson and have some assistant with them at each bronchoscopic examination in order to avoid its unnecessary prolongation, especially in young children. Adults even without cocaine anesthesia complain very little and suffer from no apparent shock when the removal of the membrane has taken from thirty minutes to one hour, and as long as the tube is in, separating the edematous mucosa, they breathe with apparent comfort. In children I always leave the bronchoscopic tube in the bronchus from which the membrane has been removed for a period of from fifteen to thirty minutes after spraying with antitoxin, and in many instances the little patients will fall asleep on the table after the respiratory exhaustion has been relieved and they are able to get free passage of air.

Tracheotomy: I have gone on record more than once in saying that I have yet to see a case of laryngeal diphtheria relieved by tracheotomy in which an O'Dwyer intubation tube failed to relieve the condition. Nor have I ever seen a case of tracheo-bronchial diphtheria relieved by tracheotomy when the tube of Dr. O'Dwyer was not long enough to reach below the obstruction. During my early days at the Willard Parker Hospital many tracheotomies were performed for the relief of membrane below the O'Dwyer tube, but the results were signal failures with 100 per cent mortality to my credit, and even with tracheotomic-bronchoscopy the results were equally as bad. In one adult three distinct casts were removed through the tracheal fistula within a period of forty-eight hours, and with the removal of the last cast a well organized blood clot asphyxiated the patient within a few minutes. Since peroral bronchoscopy has been practiced and forceps discarded for suction

tubes, the mortality has been markedly reduced during the past few years, and I am able to report at the present time a recovery rate of 64.6 per cent inclusive of cases which have died within twenty-four or forty-eight hours after admission to the hospital.

As the great majority of these cases are intubated with long tubes after the removal of the foreign body membrane there is never any anxiety on the part of the house staff that tracheotomy will be necessary from subglottic edema even if it has been necessary to prolong the bronchoscopic examination. These tubes are usually removed within the first seventy-two hours, and reintubation with the long tubes has never been necessary. In one or two cases reintubation was necessary with the O'Dwyer tube on account of marked infiltration of the arytenoid cartilages. When these cartilages are infiltrated the cords fail to abduct and intubation is always necessary to separate the cords which cannot pull apart and give free passage of air. It is well to study the condition of the arytenoids by direct laryngoscopy before any intubation tube is removed, and if the arytenoid cartilages are still swollen it is best to wait until this condition has subsided or else the child will not remain without the tube. Failure of a patient to remain without the tube during the first two weeks in the acute diphtheritic lesion of the larynx has always been said to be due to adductor spasm and subglottic edema, but one of the real causes is a pseudo-spasm of the adductors from failure of the markedly infiltrated arytenoid cartilages to separate in abduction.

The writer has been able to demonstrate at autopsy that many of these membranes may be confined to one bronchus, and he thinks the other bronchus may become involved by pieces of membrane and organisms being coughed up to the bifurcation and aspirated into the other bronchus. This may in a measure account for the insidious onset of the disease, and the gradual extension of the membrane in causing complete obstruction to respiration. The case reports which I have been unable to incorporate in this paper owing to lack of time, are thirty-seven in number. All of these cases had membrane in the trachea and bronchi, and none of them were included in this classification in whom the primary intubation with an O'Dwyer tube relieved the obstruction. The tonsils, pharynx and nares were taken into careful consideration as well as the condition of the larynx. A full report of the treatment of these cases will be published in a later paper on this subject.

24 West Fifty-ninth St.

A GALVANO-CAUTERY OPERATION FOR THE LOWER TURBINATE.*

DR. GREENFIELD SLUDER, St. Louis.

Electricity was first used as a surgical means by Fabre-Palafrat¹ in 1836, for cauterizing in deep parts. In his hands it seems to have been an electrolytic action. As a thermic power in the form of the galvano-cautery it appears to have been employed first by Heider² in 1846, to kill the tooth nerve ending. Since then it has been a widely employed surgical instrument in all parts of the body where the actual cautery might be employed advantageously. It apparently was first employed in the nose and throat by Middeldorpf³ in 1854. *And from then to the present time no treatise on the nose and throat has omitted mention and discussion of it, i. e. recommendation or condemnation of it.* Apparently some surgeons employ it successfully and some do not. It seems to be individual with the operators. (I assume that its use by rhinologists nowadays is limited strictly to the lower turbinate.)

I describe an employment of the galvano-cautery, a bit of technique, which so far as I can determine, has not hitherto been described.

For the rhinologist in whose experience it has not been satisfactory, this now proposed employment of it may possibly have some recommendations.

The *Pathological Condition* requiring correction—for which this technique is recommended—is general swelling (hypertrophy or intumescence) of the soft parts covering the lower turbinate. The clinical condition is for the most part nasal obstruction with or without Eustachian tube irritation.

When such a state of general swelling is examined it is found that in addition to the swelling of the tissues covering the body of the turbinate, there is frequently an extension of the trouble in lesser degree forward and upward on to the nasal process of the maxilla and anterior to it, making as it were a pad which is found to be located at the point of critical narrowing, i. e. the inlet of the nostril. This is more marked in noses with poorly developed

*A sketch of this operation was given, orally, in the Oto-Laryngological Section, St. Louis Med. Soc., 1911.

external alae. The cross section of the nose is less here than anywhere else unless it be the posterior outlet. The swelling is more often, however, developed in greater degree backward over its posterior end, often reaching to the Eustachian tube and beyond it.

Choice of Method.—The surgeon's judgment in favor of a cautery operation or in favor of a cutting operation, aside from his personal preferences, must depend primarily upon the fitness or fault of the bony skeleton. If the obstruction be bony—either too narrow a space to the nasal fossa, or a spur or deflected septum occluding the space which would otherwise be sufficient—a cautery destruction of the soft parts of course will not answer the purpose. If, however, the dimensions of the bony fossa be sufficient and its calibre be occluded by soft swelling, he may elect either its destruction by cautery or its removal by cutting.

The Argument Pro or Con.—The wound made by the cautery usually bleeds little or none, whereas the wound of cutting instruments, sharp or dull, is much more apt to bleed. The discomfort or reaction of the first day or two following the use of the cautery in the anterior part of the nose is sometimes, but not always, more than follows cutting operations. The reaction, however, of anterior as well as posterior packing to stop the bleeding from cutting is vastly greater than the reaction of the cautery. By means of the cautery the soft parts may be so reduced in volume and so bound back to the undisturbed bone as to closely simulate re-establishment of the normal. In cutting operations the bone is often disturbed. The cautery readily deals with tissue so placed (the "anterior pad") that it cannot readily be dealt with by cutting instruments. Dealing with the posterior swellings, in my experience, has been *very much* more satisfactory by means of the cautery than by any other means. This is specially true for those which were operated because of secondary Eustachian tube inflammation or irritation. The results for those operated for breathing space may occasionally be equaled by good snaring from in front or behind.

Technic.—*The galvano-cautery operation.* The technic usually employed is merely to draw one, two or three lines from behind forward (in one, two or three sittings) using a pointed electrode or tip. By these means I have never been able to deal satisfactorily with the posterior swelling; nor with the pad which extends upward from in front. According to my experience either of these

when left may defeat the result which would otherwise be satisfactory. I have therefore added to the anteroposterior incision a straight one descending in front, at an angle of 45 degrees from a point a little above the line of attachment of the body of the turbinate, to meet tangent the anterior limit of the anteroposterior incision and then descending below it to the level of the free margin of the turbinate, almost to the muco-cutaneous junction in the vestibule. To deal with the posterior swelling, operating from



FIG. 1.



FIG. 2.

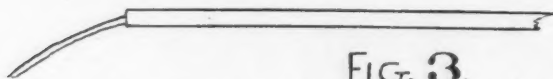


FIG. 3.

- Fig. 1. Side view of V cautery tip spread out for wide removal of tissue.
 Fig. 2. Three-quarter view of same.
 Fig. 3. Top view of same showing curve of tip for deep removal of tissue.

behind, I have added two curved incisions on the body of the turbinate, one above and one below, each beginning 1-1.25 cm. in front of the posterior tip and extending backward to meet on the lateral wall just at the tip—the upper one curving backward and downward, the lower one curving backward and upward. The tip of the cautery is then extended forward to a point which is to be the posterior end of the anteroposterior incision. It is then carried backward to the junction of the above described upper and lower incisions, (Fig. 7; I, II, III.) When swellings are thus destroyed with the particular end in view to relieve Eustachian tube irritation, I carry this extension of the anteroposterior incision *backward* to the *cartilage* of its *mouth*. For the body of

the turbinate I make a single incision at about its middle which unites the posterior with the anterior portions above described. For all of this I use an electrode which has no insulation upon it. It consists of the two copper wires which are united by the platino-iridium tip. This simple structure permits the wires to be separated, spread apart as far as 1 cm. if desired, which transforms the narrow tip into a V or U-shaped end which may be widened or narrowed to fit each case. The V or U end is then deflected outward from the straight line of the electrode, (Figs. 1, 2, 3.). The operation consists in using the electrode always on the pull, that is

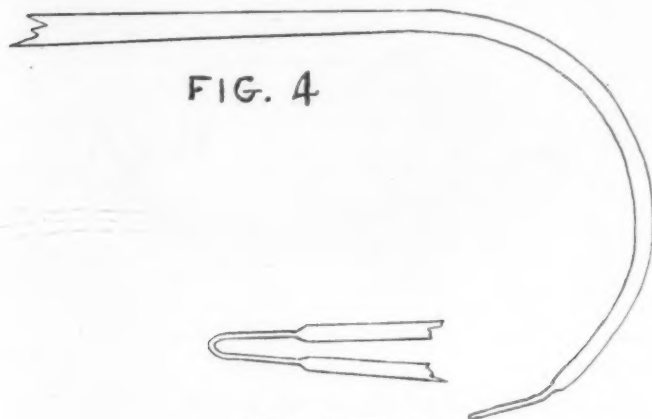


Fig. 4. Posterior tip.

from behind forward. In this way the soft tissue is engaged in the wide part of the V. The current is then put on. The glowing tip sinks into the tissue and as it (the tip) is drawn forward it acts as a spoke-shave and galvano-cautery tip combined. The glowing wire cuts out what is caught in the V or U and cauterizes the wound at the same time. It is self-evident that by widening the V or U and by sinking it deeper in the tissue the spoke-shave quality may be increased or diminished to suit the case, (Figs. 5 and 6.) Large masses of hypertrophy may be cut off the turbinate and leave a clean superficial burn which has usually less slough over it than the old-fashioned linear incisions. The posterior portion is executed by such a tip (covered with rubber tubing or

adhesive plaster to avoid hurting the soft palate) passed upward from the mouth, it being guided by its image in a post-nasal glass, (Figs. 4 and 9.) The soft palate is cocaineized and drawn forward and held in whatever way the surgeon likes best. I prefer my retractor because it locks and loosens instantly (see Fig 8.) The tissues are preferably not shrunk by suprarenal solution because the V removes them better when it can get its bite into them. The incisions are all made by the tip carried deep—to the bone. Then I instruct the patient to keep the nostril closed with cotton during the day and open it at night for breath. I prefer not to use lotions or dressings. The course of the healing is more satisfactory than in wounds with large sloughs.

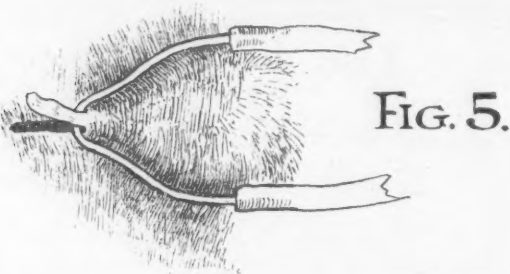


Fig. 5. Narrow and shallow removal of tissue by tip.

The *surgeon's judgment* is as indispensable in the execution of this as it ever is in the execution of any surgical procedure. Nasal obstruction from swelling of the lower turbinate may be caused by swelling of its posterior end—or its body—or its anterior end—or all or two of these combined. The swelling anteriorly is not always at the same point. The incision, to incise or excise it to greatest advantage (which is at its middle), must therefore then be moved forward or backward slightly as is indicated by the dotted lines (Fig. 7.) The opening which results from this is in the line of the current of intaken air and is of great help. Sometimes it may be omitted just as the posterior incisions may be omitted when not necessary. When, however, the pad exists anteriorly and the swelling posteriorly this combination of incisions furnishes such vastly better results than the uncombined antero-posterior incision, that I feel justified in offering this technic.

Reaction.—The reaction or the discomfort or the likelihood of spread of the reaction, according to my experience, seems to depend almost *wholly* on how *far forward* the incisions reach. The upward anterior incision is the cause of far more discomfort, etc., than any other part. When the posterior end only is cauterized there is usually *no* discomfort, etc. The procedure ought to be painless excepting as the tip approaches the muco-cutaneous junction. Slight pain (heat) is felt here usually.

Order of Procedure.—After anesthetizing the turbinate I anesthetize the soft palate. The latter is accomplished quicker as a rule. I then draw the palate forcibly forward in a self-retaining hook (see above.) A large, warm post-nasal glass is used as a

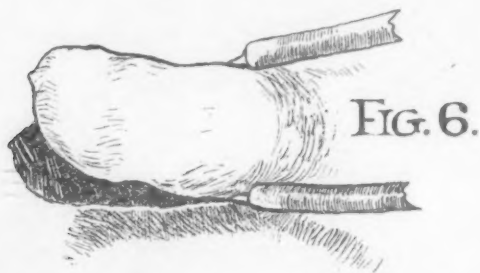


Fig. 6. Wide and deep removal of tissue by tip showing it in use as a spoke shave.

tongue depressor. The fish-hook-shaped electrode (Fig. 4) is then introduced cold in a horizontal plane through the mouth into the pharynx. There is usually ample room to permit the turn necessary to put the tip into the vault of the pharynx. The glass is then slipped back into post-nasal position. The tip of the cautery is then brought forward into the affected nostril, put in place and the current turned on. I first make the lower curved incision from in front backward because should there be a little bleeding it will be below the field of operation and therefore not obscure the view. I next make what is to be the posterior end of the anteroposterior incision (see above) and then make the upper curved incision. I then remove the electrode and then the retractor. From in front I introduce the straight tip to meet the middle posterior incision and bring it forward. When I come to the anterior

extremity of this incision I change the direction of the tip, placing it near the anterior tip of the middle turbinate. It is then drawn downward and forward to its prescribed lower limit. The procedure is accordingly executed in two stages. First, the posterior portion, and then the remainder, be that the anteroposterior in-

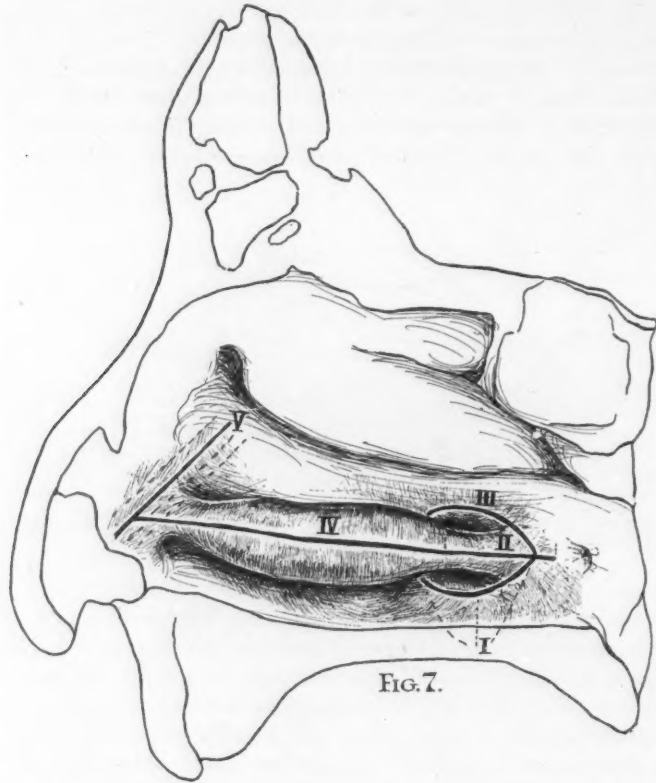


Fig. 7. Showing the lines of the complete operation. The Roman numerals represent the order of procedure.

cision alone or combined with the downward and forward incision. I operate with a tip so hot that were it once removed from the tissue it would burn itself out instantaneously so high is the temperature employed. By working with one at such high (possible) temperature I accomplish a great deal in a short space of time.

However, should the tip accidentally become dislodged from the tissues, it will be burnt out. It therefore requires some special attention on the part of the operator to prevent this. Any handle may serve for the tips. I make and break the current frequently, which seems to save pain from the *bone* when the tip gets very hot. The sense of pain for heat is the last to leave the tissues.

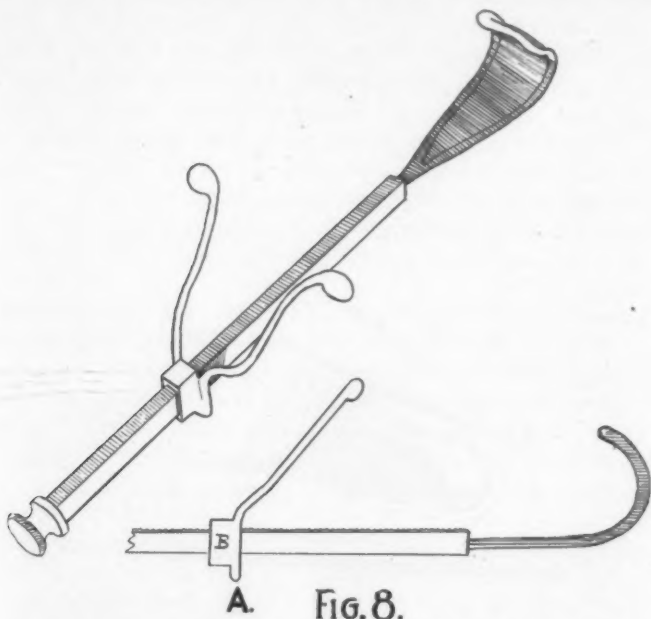
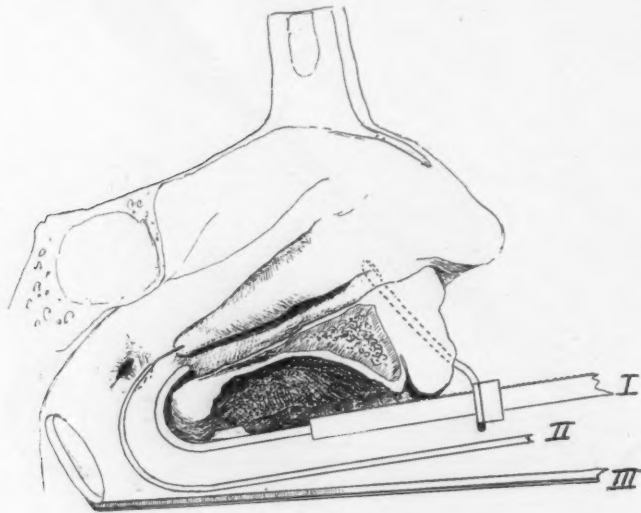


Fig. 8. Two views of palate hook. The upper surface of the shaft is milled which provided infallible, instantaneous and secure locking when the prongs press the upper lip. The short sleeve B is thereby rotated upon its transverse axis locking it into the milled surface of the shaft. It is instantly released by pulling forward the tip A.

Writer's Experience.—I have employed this method of dealing with enlargements of the lower turbinate (intumescence and hypertrophy alike) in more than 1,000 cases, extending over a period of seventeen years. Out of this number three cases required an anterior packing (Simpson's Splint) to control bleeding. I have seen, on four occasions, a swelling of the cheek when the downward and forward incision had been placed unusually far forward. Once I saw a middle ear inflammation which might have

possibly resulted from the operative procedure; but from many other points in the case I took it to be of independent origin. (It occurred two weeks after the operation.) Meanwhile I have operated by scissors from in front for the body of the turbinate; and snare from in front and behind snaring off not only the soft tissues but a section of bone with them. In none of my snare and scissor operations have I ever gotten the result so satisfactory as



9.

Fig. 9. Showing the appurtenances ready for the posterior prolongation into the anterior face of the Eustachian tube. I. Palate hook locked in position. II. Posterior cautery tip. III. Post-nasal mirror.

by the cautery above described. I have never seen the permanent drying or crusting mentioned by some authors. When the wound is healed it is a linear scar bound to the bone. The result (in hypertrophic and intumescent rhinitis) for a number of patients, now fifteen years standing, are in every way satisfactory. I sometimes see these patients for accute inflammatory conditions.

The Normal Turbinate and Eustachian Tube.—I have used this method of destroying the posterior end of the normal turbinate,

emphasizing the posterior prolongation (Fig. 7-II) in cases of persistent catarrh of the Eustachian tube. It has given satisfactory results—marked betterment of the trouble with the tube, in many *obstinate* cases. This result cannot be attained by any cutting with cold instruments.

Remarks.—It may possibly be urged that this, considered as a technical procedure, is too complicated and difficult and dangerous for the Eustachian tube. It does require a number of things to be right at the same time. However, anyone familiar with indirect laryngeal operating will find little difficulty in executing this. Nothing can stop my operation, once I get my palate hook set, but vomiting on the part of the patient which sometimes (very rarely) happens from the use of the hook despite full cocaineization. That it is no more dangerous for the Eustachian tube than any other nasal surgery, seems to me, to be proven by my above stated experience. After some familiarity with it it will not seem complicated.

Sometimes, in cases which had been operated by cold-cutting instruments in the hands of some of the most skillful surgeons of the present time, I have found that despite the fact that breathing space was perfect the result for the Eustachian tube was not satisfactory. I have secured the desired result for these patients by the posterior prolongation incision (Fig. 7-II) into the anterior face of the *cartilage* uncombined with the other above described incisions.

I append the histories of two cases which seem to me to show a particular advantage to be gotten with this technique.

Case I: Mrs. F. H. F., aged 52 years, had a moderate degree of deafness since childhood. She followed conversation provided the voice was considerably raised and could follow good actors from the seats nearest the stage. December, 1911, I did a galvano-cautery destruction of the posterior ends of what appeared to be normal lower turbinates, prolonging the central incision backward until it touched the anterior aspect of the Eustachian tube cartilage. A year later she heard the usual conversation amongst her friends and could follow easily in 15th row from the stage, almost any actor. This benefit has not in any degree been lost.

In this case inflation of the tubes had been helpful for many years but had finally ceased to help and all treatment had been stopped twenty years before.

Case II: Dr. G. D., aged 50, had had a low grade catarrhal deafness, right side, for ten years. While Professor of Medicine

in one of our foremost universities he had had the bands of a lateral pharyngitis removed and a cutting operation on the lower turbinate of the right side, most skillfully performed by one of our most skillful and learned rhinologists of the present day, the result of which was ideal in every way, i. e., breathing space and appearances. These operations did much to improve the disorder in his right ear. They did not, however, relieve it altogether and it remained a source of much annoyance in his diagnostic work and caused him great anxiety because so much of his career depended on his good hearing. In January, 1913, I destroyed what remained of the tip of the right lower turbinate prolonging the central incision into the anterior aspect of the Eustachian tube cartilage. In three months the healing and scarring were complete and the tube obstruction subsided with relief of all ear symptoms. A severe coryza gives rise to temporary disturbance. The result is apparently perfect.

1. BECQUEREL: *Trait. de l'électricité*, 1836, Vol. 4, p. 306.
2. HEIDER, MORITZ: *Zelts. d. K. K. Gesells. d. Aerzte. z. Wien*, II Jahr, 9, Bd. II, Wien, 1846, p. 421.
3. MIDDELDORFF, A. T.: *Die Galvanocaustic*, Breslau. 1854. Ver. J. Max and Co.
3542 Washington Avenue.

Observations from Twenty-four Cases of Exophthalmic Goiter.

A New Symptom. D. SMITH, *Can. Lan.*, No. 10, June, 1916.

The symptom referred to by Smith, which was present in all except one of eighteen cases, consists of a to-and-fro blowing bruit synchronous with the heart-beat heard with the stethoscope first over the region of the superior thyroid artery, and as the disease develops, over the whole lobe or the whole gland if both lobes are affected. Both the "to" and "fro" part of the bruit are about equal—in this way differing from a murmur produced by the pressure of the stethoscope over an artery which produces a single murmur. "Next to increased pulse rate," says Smith, "this is the most important symptom of the disease."

P. F.

RELATION OF OTO-LARYNGOLOGY TO OTHER SPECIALTIES.—TEAM WORK.*

DR. JOSEPH C. BECK, Chicago.

In looking over the addresses of my predecessors for the past few years, I find that the subjects of the evolution and progress of the Academy have been most excellently covered; for this year a different topic has been decided upon by the chairman of the ophthalmological section and myself. This topic is similar to that treated by Dr. Derrick T. Vail and myself in 1911, and deals with the relation of ophthalmology and oto-laryngology to the various departments of medicine and surgery. Naturally, my part of the discussion will treat of such relationship from the standpoint of oto-laryngology.

The different specialties that may be classed as such, and are recognized by the various associations on pedagogy, are divided into: (a) Surgical; (b) Non-surgical; (c) Mixed or associated.

In the surgical division we have: (1) General surgery; (2) Gynecology and obstetrics; (3) Genito-urinary; (4) Ophthalmology; (5) Oto-laryngology.

Such branches as orthopedic surgery, nervous surgery, gastro-intestinal or upper abdominal surgery, plastic and cosmetic surgery, oral surgery, etc., are all subdivisions under one or more of these five surgical departments.

Under the head of non-surgical specialties are: (1) General medicine; (2) Pediatrics; (3) Neurology; (4) Skin and venereal diseases.

Again the subdivisions of psychiatry, electro-therapeutics, hygiene and preventive medicine, etc., may belong to any of the medical or non-surgical branches.

Under the mixed or associated and yet independent specialties are: (1) Roentgenology; (2) Pathology.

The development of these special fields has led to such tremendous increase of information and literature that it is now hardly possible to be a thorough general practitioner, that is, to be thoroughly trained and posted in all the branches of medicine. Therefore, all one should expect of a general practitioner is a very superficial knowledge, except in the most important diseases, and

*Address delivered before The American Academy of Ophthalmology and Oto-Laryngology, Chicago, Ill., Oct. 5, 1915.

in these a proficiency in the diagnosis and prevention of complications. The specialization has perhaps gone to the other extreme in some instances, so that we find for example in our own special field, one man will treat only the ear and perhaps only a certain limited number of its diseases. I know of a splendid otologist that pretends to confine himself to operation on the mastoid process and intracranial complications; and you all know that Chevalier Jackson (who, however, must not be classed as having gone to the extreme) confines his work to laryngo-bronchoscopy and all that is comprised in that special field.

In taking up the various specialties mentioned and their relation to oto-laryngology, I shall mention examples of conditions where both specialties meet and frequently require associated opinions and assistance in diagnosis and treatment.

1. *General Surgery*: In my address before this Academy as chairman of the Otologic Section, I cited a number of the conditions that were at that time and to some extent still are treated by the general surgeon. In this address, entitled, "Limitations of Oto-laryngologic Practice," I cited the reason why these should be managed by the oto-laryngologist rather than the general surgeon; and I am happy to note the marked increase in the work of borderline surgery by oto-laryngologists, and the corresponding acquiescence on the part of the general surgeon that this is the work of the oto-laryngologist. Several such articles have appeared since then from the men in our ranks; of these, the name of Barnhill, Cott and Makenty should be mentioned. Last year I presented before the Pennsylvania and Indiana State Medical Associations a similar topic, namely, "Borderline Surgery;" and found the attitude on the part of the oto-laryngologists entirely different from that which I encountered when I first presented it before them. They were much more favorably inclined to the proposition at this time.

Intra-cranial Complications: With the marked improvement in the diagnosis and surgical technic of intracranial conditions, it is the oto-laryngologist and not the general surgeon who is most frequently called in consultation in such cases. Of course, if a general surgeon becomes a specialist in surgery of the cerebro-spinal nervous system, then such a man is considered particularly qualified to do this work; he is nevertheless handicapped because in the case of brain abscess or meningitis it is the original focus, as the mastoid or nasal accessory sinuses, that must receive either simultaneous or subsequent attention. Again, in cases of brain tumor, particularly of the cerebello-pontine variety, of the auditory nerve,

or hypophyseal gland there are found conditions which have a close relation with the work of the oto-laryngologist. Fractures of the skull very often have symptoms referable to these special organs, and hence an oto-laryngologist should be prepared to handle such conditions perfectly. The rarer pathologic conditions such as malformation of the skull, macro- and micro-cephalous, hydrocephalus and oxicephalous all have symptoms referable to the special organs and there is much work to be done along these lines, because the surgeons have neglected in a measure to develop the diagnosis and special treatment that have been made in other brain conditions.

Glands: Glands of the neck: these are recognized by all general men to be due to some chronic focus of infection about the nose, throat and mouth; and consequently here, too, is the oto-laryngologist called to determine the facts.

Goitre: Since goitre frequently causes difficulty in breathing, swallowing and speaking, it is not infrequent that these cases are first referred to the oto-laryngologist; and since headache is one of the annoying symptoms of exophthalmic goitre, it is also very often that an oto-laryngologist is consulted only to find that a diseased thyroid gland is at fault.

Tongue: Diseases of the tongue, such as tuberculosis, abscess and neoplasms, have for a long time been under the management of the general surgeon or the oral surgeon, yet Butlin and Bruning have shown that the laryngologist is the logical specialist to take care of these conditions, since they are accustomed to work in the mouth and the ultimate results as to speech and deglutition are well understood by them.

Cleft palate, hare-lip, surgical diseases of the jaws and salivary apparatus are so frequently recorded in laryngologic literature; and have been so successfully managed as to warrant their addition to our specialty.

Plastic surgery of the nose and ears is now described more or less in every modern text-book on oto-laryngology. Malignant diseases of the neck have invariably their origin in the mouth, throat and particularly in the larynx, and must have the laryngologist to determine that fact. It stands to reason that he will be able to take care of both the internal and the external condition from the surgical point of view. In the orthopedic department we recognized an upper Potts Disease or other form of curvature of the cervical vertebrae; and these conditions frequently manifest themselves, either as a swelling within the throat, or by referred pains

to the head and neck and paralysis of other cranial nerves. I have had a very rare condition of the cervical portion of the vertebral column known as spondylolisthesis (sliding of the vertebral bodies) which produced pressure or traction on the posterior nerve roots, causing great pain along the occipital branches of the cervical plexus. It became necessary to resect these roots according to the method of Foerster, after obtaining temporary relief from alcohol injections.

One will see from this analysis that an oto-laryngologist becomes a head and neck surgeon, and that is what I believe he should be in order to bring about progress, which will be beneficial both to the profession and patient. A frequent association with a general surgeon is in operating a general and oto-laryngological condition at the same time to save the patient two anesthetics and prolonged stay at the hospital. This proposition has occurred to me very frequently, and I desired to have the expression of others in our line. I, therefore, presented a paper at our State meeting several years ago, based upon my own experience, entitled, "Combination Operation." I then expressed myself (and am still of the same opinion) that I do not consider it good practice, because it makes the operation more difficult oftentimes for both operators, and when complications develop, one cannot always judge whether they are due to one or the other operation. If, however, this combination operation cannot be avoided, then it is better to insist upon operating either first or last, and while this may prolong the anesthetic, the ease of operating more than makes up for this added danger.

It also happens occasionally that some general surgical condition develops, as for example, appendicitis, during the convalescence or treatment of an oto-laryngological condition; and it is very necessary that the oto-laryngologist should be able to recognize such conditions. Vice versa, the general surgeon should be alert to oto-laryngologic conditions during the care of his patient.

It is not necessary to go any further into the detail of the many circumstances which will bring the general surgeon and oto-laryngologist together. It is, however, a comfort to me, as it should be to every oto-laryngologist, to note the progress in our surgical field and the recognition we have received from the general surgeon. I am reminded of the words of Senn, when I told him that I would give up general surgery and become an oto-laryngologist: "I recognize that specialty to be made up of the most proficient blowers and sprayers in the profession," blowers referring to Politzeration. I had the greater pleasure to hear him say shortly before he died:

"Your specialty is making the greatest strides of any in the surgical field."

GYNECOLOGY, OBSTETRICS AND GENITO-URINARY.

Surgery: In these three surgical specialties, there are seldom conditions that arise in which the oto-laryngologist is very much concerned. However, I would like to call attention to the many nervous symptoms which are referable to the uterus. I particularly refer to the vaso-motor changes of the erectile tissue of the turbinates and the irritation spots on the septum associated with dysmenorrhea. The question of associated chronic focal infection from the nose, throat, teeth and ear have proved to be of considerable interest in these surgical fields. Genito-urinary men have called attention to the secondary infections of the kidney, bladder and prostate from tonsillar infections.

Skin and Venereal Diseases: Practically every type of skin disease can be found on the dermal surface of the special organs of the nose, throat and ear, and many on the mucous membrane within the nose and throat. In regard to the venereal diseases, one of the commonest locations for syphilis is the ear, nose and throat; and I certainly regard a very thorough training in syphilology and syphilography as necessary for every oto-laryngologist. Gonorrhea, of course, very rarely comes within the field of the oto-laryngologist.

Dentistry: The history of the association of dentistry and oto-laryngology is very interesting, for we find that at one time it was part of the curriculum of the school of general medicine; but subsequently became an independent branch and is so at the present time. Nevertheless, during the past two years there has been such a wide enthusiasm on the part of the dentist as well as the other medical men, especially in our line, concerning the very close interdependence, that we find that the specialty of dentistry cannot very well be divided from general medicine. I am cognizant of the fact that the dental profession feels the same way. One of the greatest questions for both the dentist and oto-laryngologist is the matter of chronic focal infection from special areas. The question of the importance of pyorrhea alveolaris as an etiological factor in both local and systemic disease, is not a new one, and should be borne well in mind.

B. NON-SURGICAL.

Medicine: In regard to the medical branches, we find that diagnosis is perhaps the most frequent ground of contact between the medical man and the oto-laryngologist. One can take a textbook on internal medicine and begin systematically with every dis-

case, and find the mention of symptoms referable to oto-laryngology; and in many it may be the ones that require the greatest attention. Again, one may take a text-book of oto-laryngology, and find a great many diseases there discussed which have general symptoms that must be recognized and treated. What should be the attitude of these specialties to each other? Should the internist call a specialist to treat a nose-bleed in typhoid fever, or leukemia or tinnitus aureum in a severe anemia or plethora, a sore throat in a pneumonia, etc.; and should an otologist call an internist to treat a pneumonia associated with a case of sinus thrombosis or the secondary anemia as a result of a nasal operation in which bleeding occurred? These are questions which I shall answer when I consider the subject of team work. I may say right here, however, that it is most difficult to draw a sharp line as to the limitations of these specialties.

Pediatrics: This specialty is in reality nothing more than a subdivision of internal medicine, in that the pediatrician confines his work to the infant and child. Consequently, what I have said in regard to internal medicine applies here also. It so happens, however, that a great deal of oto-laryngological work occurs also in children, and it must be acknowledged, at least at this time, that the pediatrician has not kept pace with the development of the more modern oto-laryngologic subjects as have other specialties. The pediatricians have a tendency to procrastinate, or treat conditions with which they have no greater knowledge and training than a general practitioner. I refer particularly to the management of complications in the exanthemata of the nasal accessory sinuses and middle-ear. Another complaint that I wish to make about the pediatrician and that may also be made against the internist and other specialists, is the placing of the indication for the removal of the tonsils and adenoids. Some very obscure case presents itself, and the diagnosis not being easy, the pediatrician will often follow the popular assumption that the condition of the tonsils and adenoids is responsible for the trouble. He refers the case to the oto-laryngologist, who, without question, acquiesces and performs the operation; but the patient may not get well—on the contrary, may get worse—and the consequences are that the pediatrician will come in for considerable criticism by the people, but the oto-laryngologist is scored both by the pediatrician and the people. I have had several such instances in my practice.

Neurology: Perhaps in no other specialty is the association as marked as in these two, namely: Oto-laryngology and neurology.

More than seventy-five per cent of cases in my private practice have symptoms that are referable to distinct nervous anatomical structures; and I claim that an oto-laryngologist at this present day must be a well trained neurologist and psychiatrist in order to make a better diagnosis. General paresis, tabes, paranoia, dementia, precox, psycho-neuroses of the various types, as melancholia, manic-depressive insanity, hysteria, hystero-epilepsy, epilepsy, neurasthenia, brain-lesions, tumors, whether syphilitic or not, hemorrhages, abscesses, cysts, and the various forms of meningitis should all be familiar topics to the specialist of the ear, nose and throat. The same is true in regard to involvement of the cervical nerves already alluded to, as well as the great sympathetic nervous system with its ganglia. The analysis of a case, whether it be within our field of treatment, is one of the refinements in the practice of an oto-laryngologist. It is not very easy to do, but I hope to be able to show how it may be facilitated in discussing some of the nervous diseases having symptoms especially referable to the ear, nose and throat.

Ophthalmology: We all understand the intimate relationship of these two specialties, and since the chairman of the Ophthalmological Section is to present this phase of the subject, I will content myself with the remark that I cannot see how it is possible to practice oto-laryngology satisfactorily without a working knowledge of ophthalmology, and vice versa.

C. ASSOCIATED SPECIALTIES.

Roentgenology: This special field, particularly in diagnosis, cannot be overestimated; and while two or three years ago one occasionally heard an oto-laryngologist say that the roentgenogram was of no value to him, it is now universally acknowledged as indispensable, particularly in sinus, mastoid and foreign body work in the upper air-passages. One factor is very essential, and that is interpretation of the plates. If a roentgenologist is to be able to interpret a plate, he must have a complete knowledge of the case, that is, a complete history and the result of the physical examination. He should also be at the operation, if possible, to verify the diagnosis. The simple order that he take a photograph and locate the trouble, may prove very unsatisfactory to all three parties, the oto-laryngologist, roentgenologist and the patient. The best method to obtain good results will be discussed later, when we take up the subject of team work.

Pathologist: Only unsatisfactory results can be expected without the aid of the pathologist; and the former method of one's

making his own urine analysis and tissue examination for diagnosis of cancer or sputum for tuberculosis is a thing of the past. The constant demand for Wasserman and the other blood examinations, the bacteriological examination concerned in bacterial or vaccine therapy, and tissue examination other than for malignancy are some of the important considerations for the associated pathologist. Here, as in the case of the roentgenologist, the oto-laryngologist should be acquainted with the interpretation of the results obtained, and the pathologist should also have a complete knowledge of the whole case. Prof. Welch once said that the doctor who expects a pathological diagnosis without a complete history of the case must be classed among the unreasonable and ignorant.

TEAM WORK.

Having outlined the relation of oto-laryngology to the other special fields of medicine, I wish to call your attention to the practical application of all this, to what is generally known as team work. Team work is of comparatively recent origin, that is, in the form in which it is now employed, and one can unhesitatingly say that it is of great benefit to science and the individual; in other words, to both doctor and patient. There is a constant increase in the formation of such teams; and the man who is not in one must certainly be lonesome at times. I have recently made an investigation in this connection, and find that in Chicago alone there are eighty-four such teams, not considering a side-partner or assistant, but associations of various specialists, all well recognized in their special field. I was surprised to find with what rapidity these associations are being formed in smaller cities, and reported as successful. The men usually have a suite of offices together, and the control of a hospital.

There are serious objections to these teams and their results, and from this point of view I would like to speak. Having had personal experience for more than twenty years with team work, I believe that I am in a position to express views of its merits and demerits.

One of the great advantages claimed for team work is that no matter where the trouble may be, a positive diagnosis will be made before a patient leaves the office or hospital.

The second advantage is the prevention of possible error in diagnosing slight deviations from the normal or treating such, and overlooking a more important condition; that is, one man is a check on the other. Again, by this association each man gives and takes of his particular special knowledge, thus keeping up with the most modern ideas. Example: A patient's history is to be taken, and from the

most important symptoms will the historian judge whether the medical man or surgeon is to see the case. After that particular individual, medical or surgical, has made an examination, the patient is referred to the various specialists, as ophthalmologist, otolaryngologist, pathologist, including x-ray, etc. When all the evidence is in, then the man in charge, to whom the case was originally referred, will sum it up and outline the treatment, or refer it to one of his team-mates. Such an examination may, and frequently does take a week or more, unless it is an emergency case. Let us assume that the patient was kept all the time in the hospital for observation and examination. At the end of such an examination it frequently occurs that a negative finding is established. In other words, "nothing is the matter." While it can be argued that it is better to go to a great deal of trouble in order to know that there is nothing the matter, than to treat for some non-existing condition, the fact remains that the laity are far from satisfied to spend so much time and money to find that out. This, then, is one objection. Another is that, especially in smaller cities, the otolaryngologist being associated with one set of men will lose the referred work of those he is not associated with.

Aside from these two important objections, one on the part of the patient, the other on the part of the oto-laryngologist, there are others of minor importance. It can nevertheless be stated that there is a big advantage for all concerned to have team work in the practice of medicine. Your chairman in the past two years has been experimenting on the possibility of eliminating the two principal objections, and believes he has accomplished this, at least to his own satisfaction. It is by organizing a "team within a team."

Such a "team within a team" is feasible and practicable in a city of any size, with two or more men making up such a team. Some years ago in Chicago, several eye, ear, nose and throat specialists, who had been practicing independently, banded together and organized a team, confined, as I understand it, to the practice of those special branches; that is, one does the eye work, another the nose, especially the sinuses and the throat, a third does the ear and its complications, etc. Yet all of them are able to take care of all the four branches.

That is not the type of team that I am referring to, however. The team work that I suggest and have personal knowledge of is the following:

First: A Chief of Staff, who is a thoroughly trained eye, ear, nose and throat man, including all the borderline work. He is the main consultant in the team.

Second: First associate, who is equally well trained to do all this work, having in charge the business end of the association, and his special work is the ear.

Third: Second associate well trained in all the branches, being a man of considerable experience in general practice, especially in general surgery. He has charge of the nose and throat department. He makes all the general physical examination and is the first assistant in all the major operations, that is, in borderline work.

Fourth: Third associate who is qualified in all the branches, but ophthalmology is his special field. He is also the first assistant to the first associate in all the surgical work.

Fifth: Fourth associate, with same qualifications as the others, and his special field is neurology and psychiatry as it applies to our field, particularly diagnosis.

Sixth: Fifth associate who is the house physician, that is, in hospital service. He must be well trained in all the four branches, but has special charge of all patients in the hospital. He is the resident in that he (in our case a lady physician) lives in the hospital. He is also alternate anesthetist and has charge of the laboratory, including the x-ray. That does not mean that she is the pathologist, roentgenologist, etc., but must see to it that all necessary laboratory work has been done; he controls it and reports in person the findings in connection with every case.

Seventh: A thoroughly trained surgical nurse in the operating-room, having charge of all the supplies, instruments and the preparation of the patients for operation, and after cure. She also instructs pupil nurses in our special field.

Eighth: Specially trained anesthetist.

Ninth: Historian, librarian and secretary. This is one specially trained in the work of our specialty and can substitute for the anesthetist, surgical nurse or any assistant.

Tenth: A dentist who has been specially trained in diagnosis of dental and oral conditions in reference to oto-laryngologic conditions.

Such a combination is very refreshing and stimulating, and makes everyone feel that anyone may be displaced; in other words, no one is indispensable. These ten professionals can very well be compared to a baseball team in that, when they all work together, they win.

Fortunately, this game of treating a case of eye, ear, nose and throat affections can be done with a smaller number. Three people can do it all; for example, the first man is the surgeon and

confines his work to the ear, nose and throat, and borderline work. The second is the main assistant who can do the same work but has the eye to treat besides. He also does the after-treatments and local treatments. Between them they divide general diagnosis and neurology and one becomes the business head. The third part of the team is a thoroughly trained nurse who is at the same time the anesthetist, laboratory control, as well as the librarian, historian and secretary. She has complete charge of the operating-rooms, etc., and is also the resident that lives in the hospital, and too, looks after the cases in the hospital.

Whether the team is composed of two, five or ten depends upon the amount of work that there is to do. It must be borne in mind that a certain business element must be considered in this connection, that if one wishes results, either scientific or pecuniary, it is necessary to spend time, effort and money.

An axiom that will fit the case is "be liberal and you will be liberally dealt with," and conversely "for nothing you get nothing."

We therefore find out within our team just what ails the patient, and if the trouble is located, and found not within the province of our special field, we are in a position to refer the case to the proper place or call in the consultant we think should be called for that particular case. Again, the patient is not sent from one specialist to another to tell his history over and over only to find out that there is a negative result, that is "nothing the matter," or a half dozen different diagnoses which are only confusing.

2551 North Clark Street.

Note on the Nasal Conditions of Cerebro-Spinal Meningitis.

E. A. PETERS, *Jour. Laryngol. Rhinol. and Otol.*, V. XXX, No. 7, July, 1915.

Peters reports two cases of cerebro-spinal meningitis, in one of which the sphenoidal sinus was patent and in the other the sphenoidal sinus was closed. He finds that in the former variety of cases (with open sphenoidal sinus) the cerebro-spinal disease is milder in type, and any retention of pus in the sinus is temporary only.

The severer cases occur in those with closed sphenoidal sinus. They casually terminate fatally. The empyema of the sinus persists to the end, though the intercurrent appearance of meningococci in the nasopharynx suggested periodic leakage. P. F.

A CASE OF TUBERCULAR LEPROSY INVOLVING THE UPPER AIR PASSAGES.*

DR. H. ARROWSMITH, Brooklyn, N. Y.

Through the courtesy of Doctor Alfred H. Potter, Dermatologist at the Kings' County Hospital, I am enabled to present this interesting case.

The patient, a girl of 15 years, was admitted to the Skin Service of the Kings' County Hospital, May, 1914.

Family History: Negative.

Personal History: Denies ever being sick before except diseases of early childhood. Has been gaining weight during past few months.

Present Illness: Mother states that patient was well till three years before admission. At that time a small erythematous area on the cheek about size of a penny was noted. This area did not grow very much the first year but became nodular within first fifteen months. After first year and a half condition changed in character and covered the entire face. Large nodules and papules became evident and this condition began to spread over entire body; chest, abdomen, buttocks and extremities were all involved.

Skin: Face covered with large and small nodules and papules varying in size from a pin-head to the size of the end of the little finger.

Chest: Shows many deep seated nodules with brownish discoloration of the skin and apparently few areas of normal skin.

Abdomen: Deepest discoloration towards median line. Deep small palpable nodules present.

Buttocks: Slight discoloration, skin hard.

Thighs: Many maculo-papular spots and dryness of skin. Slight exfoliation and marked discoloration.

Knees: Dry and exfoliating, fewer papules.

Lower Legs: Markedly discolored. Skin shining and dry. Many spots of discoloration varying from deep brown-bluish red to pink erythematous areas.

Feet: Dorsal surfaces dry, hard, cracking, exfoliating. Soles: Dry, nodular, many papules present. Bluish pink in color.

Arms: Discolored, maculated. Lesions less extensive.

Hands: Skin soft, Papules on back of hand. Fingers thick. Many macules and papules from elbows to hands. More thickly collected at wrist.

*Read before the New York Academy of Medicine, Section on Laryngology and Rhinology, Oct. 27, 1915.

Physical Exam.: Head—Eyes: Pupils equal, regular, react to light. Sclera hemorrhagic. Ears: Large, nodular, many tubercles on helices and lobules. Nose: Thick, nodular. Mouth: Teeth fair. Lips: Thick, many tubercles present.

Mucous Membrane: Pale. Many tubercles on buccal surface. Large nodules on uvula. Many nodules on palate. Neck: Glands enlarged.

Thorax: Well developed and nourished.

Lungs: Clear.

Heart: Sounds clear, no murmurs. Fair quality.

Abdomen: No areas of tenderness nor abnormal masses.

Extremities: Other than skin condition, negative.

The lumen of the nostrils is decreased two-thirds by cicatricial contraction—no other lesion in the nostrils can be seen, owing, perhaps to the limited view obtainable.

The buccal mucus membrane is studded with nodules, as is also the uvula.

The naso-pharynx contains numerous masses.

The epiglottis is dumb-bell shaped, having a large nodular mass on each side of its upper edge, with a concavity between them, which at first glance seems to be the result of ulceration, but is due to the distortion caused by contraction.

The arytenoids are enormously infiltrated, but the larynx itself as far as can be seen, is normal.

Curiously enough with this extensive involvement the patient complains of no discomfort, except moderate nasal obstruction and slight dryness of the throat.

I cannot say what the result of the Wassermann test in this case was. There has been no family history and no known exposure. Within the last few months, her brother came North from Florida with a small macular spot over the tibia, which has been pronounced leprosy by the dermatologists. I have brought the patient here because she shows such a typical picture of what the text-books describe. The result of her nasal lesions are particularly striking.

I have recently examined another leprosy patient whose disease is of the neurotrophic type. Her only manifestations are contractions of the fingers and toes and ulceration on the soles of the feet. I investigated her air passages with the greatest care, hoping to be able to identify the original lesion in her nasal chambers, where, according to the authorities, it is always located. I found, however, absolutely no abnormality.

170 Clinton Street.

SYPHILIS OF THE LUNG.*

DR. HAROLD HAYS, New York.

R. G., age 46, consulted me on August 20, 1915, stating that six months previously, after a very bad cold, he suddenly lost his voice. Within a few weeks his voice returned but was very husky. Since that time he has had considerable shortness of breath and a



peculiar asthmatic stridor. At the end of an inspiration there was a peculiar singing, rasping sound. There was no pain.

Local examination showed no trouble with the nose or throat. Examination of the larynx revealed a congestion of the entire mucosa extending down into the trachea. There was some thickening of the arytenoid cartilages. Specific history was negative. History of the inhalation of any foreign body was also negative, although the symptoms suggested that the irritating cough, dyspnea, etc., came from some irritation below the vocal cords.

*Read before the New York Academy of Medicine, Section on Laryngology and Rhinology, Oct. 27, 1915.

Feeling that a thorough examination of the lungs was necessary I referred the case to Dr. Taschman, who failed to find any pathological condition in his chest to account for his peculiar cough. He suggested that it might be a laryngeal asthma—an anaphylatic state involving all the mucous membranes of the larynx and bronchi. I suggested to Dr. Taschman that an x-ray of the chest be made and a Wassermann taken.

An x-ray picture taken on August 26, revealed a large mass, probably interlobar starting at the base of the lung with a width of one and one half inches extending in a conical shape outward between the upper and lower lobes for about three and one-half to four inches (See Plate). It was impossible to state at that time just what the nature of the growth was—whether it was a mediastinal tumor or a gumma. We were inclined to think it was the latter, and this diagnosis was substantiated when the report on the Wassermann was received and found to be four plus. Dr. Taschman states that it is a type of syphilis of the lung that is very unusual, the most common type being the mediastinal, then the basilar and the apical.

It is unfortunate that the patient became very much incensed when the truth was told him and refused to have any further treatment at my hands when it would have been extremely interesting to have followed out the results of proper antisyphilitic treatment.

11 West 81st Street.

Idiopathic Mastoid Abscess. V. DABNEY, *Jour. A. M. A.*, Aug. 7, 1915.

Idiopathic mastoid abscess, that is, one occurring without immediately preceding or accompanying inflammation of the middle-ear is accounted for by Dabney on the basis of hematogenous infection. He reports two cases from his experience. He reviews, also, the literature, and of the forty-six cases considered therein, he rejects twelve as not being conclusively idiopathic mastoid abscess. His own two cases thus increase the number to twenty-six. As to the hematogenous origin of the abscess it is perfectly possible for micro-organisms to pass through one tissue without producing disease into another tissue where they lodge and cause disease.

P. F.

**A CASE OF FOREIGN BODY IN THE THROAT OF A CHILD
THREE AND ONE-HALF MONTHS OLD.**

DR. CHARLES M. ROBERTSON, Chicago.

Baby M. K. aet. three and one-half months, while being held in her father's arms, secured a brass collar button from his shirt-band and put it into her mouth.

The father, trying to recover the button, found the baby had swallowed it. The child passed a restless night and was unable to take



food. For three days it was allowed to remain in the child's throat, at the end of which time she was brought to me for treatment.

The x-ray plates show the button lodged in the esophagus in front of the fourth and fifth cervical vertebrae.

The child was in great distress from three days' fasting, from pain in attempting to swallow and from a profuse discharge of mucus.

The button was recovered by direct esophagoscopy which was somewhat difficult owing to the youth of the patient, which made it hard to use the spatula we had on hand, as it was too large for so small a mouth.

The case was operated upon without anesthetic.

No complication followed the operation and the child was recovered after twenty-four hours.

This case is reported on account of the extreme youth of the patient, which made the handling of the case much more difficult. The button lodged in the most common site for foreign bodies in the esophagus which is just posterior to the cricoid cartilage.

Great care should be exercised in manipulating tissues for removal of foreign bodies in the throat of children on account of the liability and danger of edema from operative trauma.

30 North Michigan Boulevard.

EDITOR'S NOTE.

In the December, 1915, issue of *THE LARYNGOSCOPE*, a paper was published by Dr. Lewis A. Coffin, of New York, on "The Non-Operative Treatment of the Accessory Sinuses." Dr. Frank Louis Stillman, of Columbus, Ohio, has called attention to a paper entitled, "A Method for Medicating the Deeper Recesses of the Nose and Ear," presented by him to the Middle Section of the American Laryngological, Rhinological and Otological Society at the St. Louis meeting on February 22, 1913, and published in the Transactions of the Society for that year, embodying the same principles of treatment as outlined by Dr. Coffin.

The matter was submitted to Dr. Coffin, who gladly acknowledged that both Dr. Stillman and he had come by a similar idea independently and expressed regret for his inadvertent failure to give Dr. Stillman the credit that is due him.

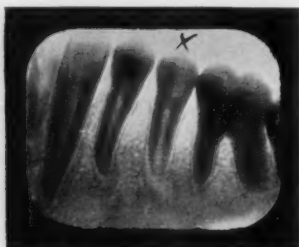
P. F.

AN UNUSUAL DENTAL CASE SIMULATING ANTRAL SINUSITIS.

DR. HENRY B. DECHERD, Dallas, Texas.

On May 4, 1915, H. B., male, white, age sixteen, consulted me for pain over the right antrum of Highmore. After careful examination, I could find no infection of the antrum and referred the patient to a dentist. As the dentist could find no evidence of diseased teeth, he referred him back to me. To make matters sure, I irrigated the antrum with warm salt solution with negative results; and again referred the patient to the dentist.

The dentist had an x-ray examination made which showed a definite enlargement of the root-canal of the second right bicuspid. I append herewith the x-ray plate and the dentist's report.



H. B., male, white, age sixteen years, referred by Dr. Dechard, complaining of pain, continuous, more severe at times, in region of upper molars. Previous pain had arisen from lower jaw. Dentist had advised that there was an erupting third molar of which there was no sign and age did not indicate.

Examined all teeth; no decay, no fillings, no history of traumatism. Advised the patient to return to specialist for examination of sinuses, and remarked if from teeth, it would be necessary to await localization of pain.

Returned in a couple of days complaining of soreness in lower bicuspid and first molar. Clinical examination indicated lower second bicuspid to be seat of trouble. As stated before, there was no decay and no history of trauma. X-ray examination revealed arrest of development of bicuspid root with exceedingly large foramen and root-canal. Next day saw patient; considerable swell-

ing opposite; buccal aspect of tooth involved; pain only slightly diminished. Opened pulp canal and removed pulpy mass of greenish color; relieved pain; inoculated culture tube and sent it to pathologist for examination of growth. Obtained pure culture of doubtful strain of pneumococcus.

Treated root-canal with iodine; swelling disappeared for a day or two but returned; no trace of pus, only serous exudate.

Decided root apex condition would prohibit successful treatment, so extracted the tooth and found as shown by x-ray.

Socket closed slowly without pain and at no time was there pus.

This was a very unusual dental case, as it was in no manner related to an ordinary dental abscess. The pulp had not fully performed its function in due time and the infection was metastatic and caused by the pneumococcus. Normal circulation had not obtained in the pulp; force of mastication upon abnormal condition furnished irritant.

There is no explanation I know for this condition, obtaining in a mouth with full complement of well-formed and arranged, sound teeth.

E. W. SMITH, D. D. S.

All things being considered, it is my opinion that the infection was hemotogenous and originated in badly diseased tonsils, the removal of which had been on several occasions advised.

701 Wilson Building.

Perithelioma of Maxillary Antrum. H. L. WHALE, Proc. Roy. Soc. Med., Laryngological Section, Vol. 8, No. 6, April, 1915.

Patient a woman, 52 years old. For four years she has had an increasing lump under the right eye. In 1914 puncture revealed a solid tumor. Operation was performed and a large mass of growth shelled out. Since then the mass has regrown. Histologic examination of the tumor showed circular, cellular areas separated from one another by fibrous tissue containing bony structure. Interior of these areas filled with red blood cells. Externally there is a layer of flattened cells suggesting endothelium. External to these are a great many small, ovoid cells with a well-defined nucleus. These appearances suggest perithelioma, originating in the small blood vessels.

P. F.

INJURY TO THE SOFT PALATE AND UVULA IN TONSILLECTOMIES.

DR. JOHN A. THOMPSON, Cincinnati, Ohio.

In several cases the writer has been chagrined to find after a carefully done tonsillectomy, that the soft palate had been partially denuded of mucous membrane and the uvula so injured that it sloughed. This injury has occurred when the uvula was pushed away from the snare wire with the finger, and when it was held out of the way with a uvula holder or forceps. Clearly some other explanation than injury by the wire is necessary to understand the damage under such conditions. As my preliminary dissection is done with scissors, under direct inspection, and as the palate was uninjured in my cases, before using the snare, some unfortunate result of its use was the cause of the palate lesion. Three recent cases have solved the problem for me as to the mode of injury.

A boy of thirteen had tonsils with chronic suppuration in the crypts. His tonsils had been treated by the galvano-cautery before I saw him. There were numerous bands of scar tissue binding the tonsils to the pillars. The tonsillectomy was done under local anesthesia. The descending palatine branch of the fifth nerve was blocked at the posterior palatine foramen by an injection of novocain. Novocain injected between the tonsil and constrictor muscle and cocaine applied to the mucosa, gave perfect anesthesia, so a slow, careful dissection was possible. The upper two-thirds of the left tonsil was freed before a snare was applied to the base. Yet when the tonsil was removed, the mucous membrane was stripped up the posterior pillar and palate to the side of the uvula, baring the muscular fibres. No forward traction was made on the snare (the Mosely instrument) and the tonsil hid the palate until after the injury was done.

In a second patient with similar adhesions both tonsils were dissected, under local anesthesia, until they hung into the mouth attached only by a small pedicle at the base. The combined novocain and adrenalin injection had given us perfect anesthesia and a bloodless field in which to operate. After tightening the wire until the tonsil was almost cut off, I pushed it to the side and looked behind it. The mucous membrane was stripping up the posterior pillar and would have injured the palate if the strip had not been cut with scissors.

In the case of a third patient I was able to locate the point of adhesion which causes this stripping of the mucosa and the damage to the palate when it has not been touched by any instrument. In a six-year-old boy operated on under general anesthesia the right tonsil was easily removed by the Beck snare. The left tonsil was adherent and only the upper part of it was removed by the Beck method. When the remaining piece of tonsil was lifted by forceps for dissection before applying the snare, the lower posterior portion was found firmly adherent to the plica tonsillaris. Freeing the anterior surface of the stub and making traction on it, showed that it would strip up the membrane on the posterior pillar very easily. The plica was cut with scissors between the tonsil stub and posterior pillar and the remaining piece was snared off without injury to the pillar or palate.

Published articles and private talks with men doing laryngological work show that injuries to the palate and uvula in tonsillectomies are frequent. They occur in patients treated by the most careful and competent men in the specialty. They are often not due to direct damage by the instruments used. The fibrous margin of the plica behind the tonsil is sometimes so firm it does not cut easily by the wire and when adherent to the tonsil it pulls into the snare, tearing the pillar and palate. Careful cutting of the plica between the posterior pillar and the tonsil will prevent injuries to the palate, the cause of which has not heretofore been understood.

628 Elm Street.

Bilateral Optic Neuritis, Due to Sphenoid Sinusitis. A. A.

BRADBURN, *Brit. Med. Jour.*, Jan. 16, 1915.

Patient, a woman twenty-seven years of age. When first seen the only objective signs were the slight weakness of the left abductor and the suspicious neuritis of the left disc. The length of time which elapsed before the neuritis became definitely evident on the face of the disc pointed to a lesion affecting the nerve some distance behind the eyeball. This was further confirmed by the absence of pain or tenderness on pressure over the eyeball and the primary implication of the sixth nerve, which also assisted the localization of the seat of the trouble; this could scarcely be anywhere else but on the body of the sphenoid where it traverses the cavernous sinus along the carotid artery.

P. F.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON LARYNGOLOGY AND RHINOLOGY.

Report of Retiring Secretary, 1915.

Mr. Chairman and Members of the Section: Your secretary has the honor to present the following report for the year, 1915.

Statistical: Total enrollment, 173; Number of meetings, 7; Average attendance, 54; Number of papers read, 4; Number of patients presented, 65; Number of specimens exhibited, 10; Number of instruments demonstrated, 8; Number of cases reported, 12; Total number joining in discussion, 151.

This is the first year during which the meetings were to be as nearly as possible clinical in nature. This brings before the members of this Section, only cases of interest, eliminating the ordinary and uninteresting cases seen so frequently in the daily clinics. The discussion of these cases has been of a very thorough, deep and sober nature, of necessity precluding theorizing and speculation that may follow the discussion of papers.

An average attendance of 54 attests the interest manifested despite the fact that but two gentlemen of note from out-of-town were invited to address the Section. The unfortunate fact that we were unable to obtain an evening for an open meeting before the Academy and the closeness of the last two meetings on account of holidays.

The members who presented cases are to be congratulated that out of a possible 70 patients listed for presentation but five failed to appear.

Some of the instruments presented before the Section this year are, or are destined to be of note in the annals of our specialty.

The total enrollment shows an actual increase of seven, there being but one resignation and fortunately no losses by death. Eleven new members have been added to our list, some of these, however, formerly were members.

No matter how scientific or practical a body such as this may be it is always of interest to know the financial status—what has, is being and is hoped to be done. No doubt some of you will remember when the dues were \$5.00 per annum, then \$3.00 and \$2.00. The last year the dues were \$1.00 and it is gratifying to note that out of a membership of 173, ninety-eight paid their dues, this being a large increase over preceding years, for not all members of this Section specialize in this work. The most judicious expenditure of money this year, has been for the purchasing of a badly needed equipment for the examination of patients presented before the Section and for the services of a nurse on meeting nights to assist patients, sterilize the instruments and give them proper care after being used.

To bring more vividly to your mind the substantial and practical work done during the year the following list is added.

1. Abscess, Larynx.
2. Carcinoma, Larynx, Tonsil.
3. Cysts, Base of Tongue, Aryepiglottic fold.
4. Endothelimoa, Trachea.
5. Fibroma, Naso-pharynx.
6. Fibromyxoma, Nose.
7. Goiter with laryngeal paralysis.
8. Hemorrhage diathesis.
9. Leprosy, Tubercular.
10. Laryngeal Paralysis, Double, Single.
11. Laryngectomy, Laryngocele.
12. Nasal deformity due to, Submucous resection, Cocain Crystals.
13. Papilloma, Vocal cords, Nose.
14. Plastic operations, Closure of nose-pharynx septal perforations, Bone transplantation into nose.
15. Sarcoma, Naso-pharynx.
16. Scleroma, Nose and Throat, Larynx.
17. Sinusitis, in child, Double frontal.
18. Stenoses, Laryngeal (Throat cut 2), Esophageal.
19. Syphilis, Larynx, Hard palate.
20. Teeth, diseased and iritis.
21. Telangectasis.
22. Tongue, Black-hair.
23. Tonsil infected, by Gram negative diplococci.
24. Thyroidectomies.

Cases Reported: Blindness incident to external ethmoid operation; Epistaxis in a hemophil overcome by blood transfusion; A bleeder not a hemophil; Tuberculosis septum nasi; Chronic frontal and sphenoidal sinusitis; Tracheo-bronchial diphtheria; Foreign bodies in both bronchi; Foreign body in left bronchus; Secondary hemorrhage following posterior tip operation—transfusion; Syphilis of the lung; Frontal and maxillary sinusitis and sequelae due to staphylococcus pyogenes albus; A tonsil operation minimizing hemorrhage; Double abduction paralysis; Hemorrhage diathesis.

New Instruments: Modified Glatzel plate; Pocket instrument for suspension laryngoscopy; Intubation spectrum, Combined head mirror and protector; A new respirator; Two suction apparatuses for sinus work; A suction tongue depressor.

It is evident from the above that the year has been an active one and no doubt is but an index as to what succeeding years will be as interest grows in seeing well selected and clearly demonstrated cases in the Rhino-laryngological clearing house of New York City. Respectfully submitted,

FRANCIS W. WHITE.

AMERICAN LARYNGOLOGICAL, RHINOLOGICAL AND OTOLOGICAL SOCIETY,

(Continued from page 72.)

DISCUSSION.

DR. E. B. DENCH, New York City, thought it a mistake to follow the foreign school in making a classification of these cases into serous, suppurative, or peri-labyrinthitis. Neumann, Ruttin, and others had said if a diagnosis was made of one or another kind, one must do one or another kind of operation. He thought Dr. Emerson's plan of treatment in the case under consideration the proper one. He had had cases in which, if he had followed the foreign school, he would have killed his patient. The results of the German operators did not show that their operative recommendations were always warranted.

DR. NORVAL H. PIERCE, Chicago, corroborated what Dr. Dench had said with reference to the foreign school and their methods. He cited a case, which had been under his observation at the Illinois Eye and Ear Infirmary, of acute otitis media, with obvious mastoid and labyrinthine involvement. The woman had had repeated attacks of discharge from the ear, extending over a number of years, each time running an apparently normal course, until the last, when swelling and pain appeared over the mastoid. She complained of great dizziness. The caloric reaction was negative, as to both heat and cold. There was nystagmus to the opposite side. She was absolutely deaf in the diseased ear, as proved by Neumann's apparatus. There was no fistula. Here was a case for immediately going into the labyrinth, according to the German School. He had so completely abandoned their ideas that he had probably swung to the opposite extreme. He did not open this woman's labyrinth, and she recovered. This was one of six or more similar cases which had come under his observation during the past year. He did a simple mastoid operation. It was impossible to differentiate between suppurative, destructive labyrinthitis, and serous labyrinthitis which was capable of recovery. The cases which he had observed for some length of time had recovered function so far as hearing was concerned. He believed one should never do a labyrinth operation when symptoms of meningitis were present; to operate under such circumstances would have very little effect.

DR. EMERSON, in closing the discussion, said his object in presenting this case was to bring out just such remarks as those of Dr. Dench and Dr. Pierce. These cases should have a preliminary mastoid operation, and the labyrinthine operation only in the presence of evident signs.

The Labyrinth Operation; the Frequency With Which it is Demanded as Determined by Hospital and Private Statistics Extending Over a Period of Ten Years. EDWARD BRADFORD DENCH.

(Published in the August, 1915, issue of THE LARYNGOSCOPE.)

DISCUSSION.

DR. GEORGE W. MACKENZIE, Philadelphia, disagreed with Dr. Dench regarding the treatment of cases of circumscribed labyrinthitis in the semicircular canal by curetting and nothing more. Of course, it was desirable to preserve the hearing as much as possible, but by curetting in the neighborhood of a fistula one would be apt to spread the labyrinthitis. He had done this in one case, with loss of function in the horizontal position, but with retention of function in the vertical canals. In cases of labyrinthine suppuration, with positive evidence that the labyrinth was dead, the labyrinth operation should be done at the same time that the mastoid operation was performed, otherwise the case was apt to terminate fatally. He had reported fifty-five cases, not his own, in which there were two fatalities. One was a case of Neumann's, and one Alexander's. Both these fatalities were due to the fact that the radical mastoid was done and the labyrinth left untouched when the labyrinth should have been operated radically. There was some doubt in the minds of these surgeons as to the diagnosis of labyrinth suppuration before the operation on the mastoid. These two errors were committed early in the experience of these men, at a time when the knowledge of the labyrinth was more limited than it is now. My present conviction concerning the subject of labyrinth suppuration is that we should not attempt any operation on the mastoid without at the same time draining thoroughly the labyrinth. Furthermore, that no operation on the mastoid or labyrinth should be attempted until a most careful examination of the labyrinth by all known tests had been made and a positive opinion arrived at concerning the condition of the labyrinth. Circumscribed irritative conditions of the labyrinth, (congestion) without the fistula sign did well with mastoid operation alone. Circumscribed destructive conditions would always tax the skill of the surgeon as to what was best to be done. Each case would need separate consideration as there was no fixed law by which one should be governed in all cases.

DR. ARTHUR B. DUEL, New York City, thought it interesting to note the change of attitude with reference to these cases of suppurative labyrinthitis. When the Vienna school first promulgated their ideas their plan was pretty generally adopted. No doubt many mistakes were made as a consequence. The general opinion among surgeons of the present time was to regard acute cases, whether suppurative or not, as unfavorable for operative intervention. These cases should never be operated in the acute stage unless there were evidences of a concomitant meningitis. It was much better to wait; for, if operated upon immediately, they were much more apt to die, by precipitation of the very complication they were trying to avoid, than to recover. He had shared with Dr. Pierce the rather hopeless view of meningitis until last year, when he succeeded in curing a case by means of the Neumann operation and drainage at the internal auditory meatus, accompanied by repeated spinal punctures, drawing off twenty to thirty cubic centimeters of milky cerebrospinal fluid, at the same time injecting back about forty grains of urotropin in 15 to 20 c.c. normal salt solution. At each subsequent tapping of the cord, done at intervals of one or two days, six

times, the fluid became more and more clear, until the patient finally recovered. He shared the belief of the majority that in chronic cases if, at the time of operation, the gross appearance indicated the presence of a fistulous opening and necrosis, it might be necessary to open the labyrinth; otherwise it was better to wait for further symptoms.

DR. MACKENZIE added that many cases of supposed labyrinthine suppuration of ten years standing might present all the symptoms of labyrinthine suppuration and yet there might never have been this condition, but instead, a chronic labyrinthitis of the plastic type. Unless, therefore, Dr. Beck, or someone else, had seen the case at the very onset, with complete loss of function, it could not be pronounced a case of labyrinthine suppuration. There must be typical signs of suppurative labyrinthitis. There was, with suppurative labyrinthitis, sudden, complete loss of hearing, loss of equilibrium, with negative findings by caloric tests, by galvanism, and by turning. Answering a question by Dr. Pierce concerning the method of differentiating between serous and suppurative labyrinthitis, the speaker said it was indeed difficult to make the differentiation early. Headache and fundus findings were guides. When present they suggested a suppurative type of labyrinthitis.

DR. GEORGE L. RICHARDS, Fall River, Mass., asked whether the discussion concerned the perilymph or endolymph channels, whether within or without the membranous labyrinth. It made a great difference.

DR. NORVAL H. PIERCE, Chicago, said the functional symptoms of serous and suppurative labyrinthitis were the same, and one condition could not be differentiated from the other. The only light thrown on the subject was that given by the meningeal complications. It was better not to operate until the meninges were involved.

DR. DENCH, in closing the discussion, said, in answer to Dr. Richards' question, the subject involved both the perilymph and the endolymph, and was within the bony capsule. It could not involve the endolymph without involving the perilymph. That was just the hair-splitting question the German school had raised. He could not agree with Dr. MacKenzie with reference to the treatment of circumscribed labyrinthitis. He believed it wise, in the presence of a fistulous tract, to go in with the curet, where this could be done without breaking down nature's barriers to the course of infection. He removed all necrosis with a small curet.

Report of an Unsuccessful Labyrinthectomy for Relief of Distressing Tinnitus Aurium. ARTHUR B. DUEL.

Tinnitus aurium of such distressing character as to produce insanity, or to drive the sufferer to suicide, is, fortunately, a rare occurrence. The occasional case, in which every effort has failed, and where sedatives have become useless, except for the immediate time being present as sad a spectacle as the most hopeless alien. The few cases that have been reported in which major operations, like division of the auditory nerve or destruction of the labyrinth, have been tried for their relief have met with so little success that no one would be tempted to undertake another, except under great stress of circumstance, or some peculiarly hopeful prospect, as in the case recorded.

The patient, a woman, sixty years of age, married, had slight deafness following typhoid fever at the age of eighteen years. At the age of thirty-five she first noticed noises in the head, described as escaping steam. Hearing became gradually impaired, and the noises persisted. She was variously treated by different specialists, without relief. She finally came under the observation of Dr. Fielding O. Lewis, of Philadelphia, in 1912. At that time she could hear slightly a watch in close contact with the left ear, and a whisper at about six inches. Local measures failed to improve the condition. She now complained of a monotonous humming around the outside of her head, with intervals of a thumping sensation on the right side of the head. The division of adhesions about the ossicles of the right ear, lumbar puncture, ossiculectomy of right ear, all gave but temporary relief, the tinnitus becoming more and more distressing, necessitating the administration of small doses of morphine. Destruction of hearing on the right side was suggested, but consultants advised against this procedure. Dr. Duel was then called in consultation. After noting all the necessary tests, and after discussing the problem, outcome, it was decided to ablate the right labyrinth. A complete labyrinthectomy utterly failed to influence the tinnitus. The special feature of the case which caused its being placed on record, was the fact that three months after the labyrinthectomy, Dr. Lewis found that the patient still had hearing on that side. The tinnitus was no better. The most carefully conducted tests made by Dr. Duel confirmed this unusual finding.

Six months after the first operation a second was performed. Just before operation it was again demonstrated that the patient could repeat words shouted in the operated side, the unoperated side being stopped by a noise apparatus. At this operation the bone wax which had been employed at the first operation to stop the flow of cerebrospinal fluid was removed from the cochlear cavity, which was apparently clear of any vestige of the cochlear apparatus. Thorough curettage of the cochlear cavity was performed, and the vestibule which was entered from behind, and the ampullae of the semicircular canals were destroyed. No bone wax was used on this occasion. The wound healed and was dry for several months at the time of the report.

The important phenomenon observed in this case might cause one to question the theory of Helmholtz with reference to functions of the labyrinth. Does it support that of Shambaugh? At any rate it should stimulate further investigations of the physiology of sound production.

DISCUSSION.

DR. GEORGE E. SHAMBAUGH, Chicago, said that the first question of importance in this case was to determine the probable cause of the ear trouble. From the history of the case alone, deafness coming on insidiously in middle life, associated with annoying tinnitus, it would appear most likely to be one of otosclerosis. This at once offered a probable explanation for the most interesting feature, namely, that the patient appeared to hear in an ear where the cochlea had been completely destroyed. The explanation that suggested itself was this. In otosclerosis the symptom of paracusis willisi was usually very marked.

In these cases it was not unusual for a patient who had great difficulty in hearing the voice to find that in the presence of a noise, as, for example, on a railroad train, he could hear even better than a normal hearing individual. Now in the case here reported, where the cochlea in one ear had been destroyed and a noise apparatus was applied to the opposite ear, it seemed not unlikely that through the phenomena of this paracusis willisi the patient might be able to hear even where no hearing could be detected when the same test was applied to a normal ear.

The generally accepted view was that sound perception takes place exclusively in the cochlea. If this be true, then an injury even less extensive than in this case, it would seem, must result in a total destruction of hearing in that ear. If it be true that the patient did actually hear in the operated ear, he believed it must be accepted that the perception took place in the vestibular apparatus. He did not believe that any theory of sound perception which placed this function in the cochlea would account for hearing in an ear which had been subjected to the operation performed by Dr. Duel.

The annoyance from tinnitus aurium was much greater in some cases than in others. Some of this difference was to be accounted for by the difference in the general nervous make-up of individuals. A subjective noise which would cause only moderate annoyance to one person would in another more nervous individual almost drive to suicide.

DR. GEORGE W. MACKENZIE, Philadelphia, thought it unfortunate that careful tests were not made before anything was done, as it might then have been determined whether the lesion was in the conducting or the perceptive apparatus. It was possible in nerve lesions to have tinnitus aurium. Two cases had been reported eight years ago, in the *Wiener Klin. Woch.*, by Dr. Alice V. Mackenzie, which were of syphilitic origin. He suggested that in Dr. Duel's case the condition was a post-syphilitic lesion. He did not believe the patient heard. He thought the combination of the speaking-tube method with the noise apparatus would have given a different result.

DR. FIELDING O. LEWIS, Philadelphia, said the patient still insisted, with the use of the noise apparatus, that she could hear. Dr. Duel had made a handsome wager that she could not hear after the first operation, but by the careful tests described had demonstrated himself a loser, both to himself and all others present. After the ear became dry, following the second operation, the speaker had tested it again with the noise apparatus, and she still said she could hear sounds but could not determine words. He had her daughter, whom she could hear best, stand by her, without speaking, and the patient again insisted that she could hear sounds but not words. She had been taken to a sanitarium. She had never had paracusis willisi. Wassermann test was negative, and she had been given iodids. Other tests were negative.

DR. DUEL, in closing the discussion, said the functional tests had been as elaborate as they could be made. If, as might be assumed, a portion of the cochlea had been left at the first operation, the wax, impinging upon that, might have carried the sound waves in, if Dr. Sham-

baugh's theory is correct. If a remnant of the cochlea had been left at the first operation it had probably been removed at the second. The curettage of the vestibule in the first operation had not been done as thoroughly as that of the cochlea. In the second the whole labyrinth had been removed. The point he raised was whether destruction of the cochlea destroyed hearing.

Experimental Studies of the Effect of Various Atmospheric Conditions on the Upper Respiratory Tract. GERHARD H. COCKS.

(Published in the September, 1915, issue of THE LARYNGOSCOPE.)

DISCUSSION.

DR. WOLFF FREUDENTHAL, New York City, considered the effect of atmospheric conditions on the nose and throat a very important question, one in which he had been interested for more than twenty years, and upon which he had written a great deal. When he first came to this country he noticed that he could not breathe as well as in Germany, and that when he went into hot apartment houses he could hardly breathe at all. He began then to investigate the amount of humidity and the temperature in these houses. The normal amount of the relative humidity should be fifty per cent, though one could live comfortably in an atmosphere of forty per cent. But in winter it went below twenty per cent. He could not agree with the essayist as to the influence of the moisture in atmosphere. The experiments were highly interesting, but not conclusive. In New York and the New England states it was not the moisture of the surrounding waters the effects of which one felt. The majority of people spend daily twenty-three hours at least in very hot and very dry rooms and not at the sea shore. He believed that dry atmospheres were conducive to dry rhinitis, and that those who live in moist atmospheres do not have this. He was surprised at Dr. Cocks' statement with reference to laundry workers having dry rhinitis. The steam, as Dr. Cocks had said, came directly up from the mangles. If applied to the hands it would burn them, and the same, applied to the mucous membrane, would cause destruction of the same. The effect was not one of moisture, but of burning. It was surprising to see how well some people could breathe with swollen mucous membranes, whereas others would complain of being unable to do so with dry and wide nasal chambers. The latter class could not assimilate the air well. Experiments along this line had been made at the University of Kiel and Freudenthal's views corroborated in every point. At New Bedford Station, 40 miles outside of New York, experiments had been made with reference to tuberculosis, and it was surprising to see how much effect dryness of atmosphere had on these patients.

DR. ARTHUR I. WEIL, New Orleans, La., said this paper explained the statement, made in conversation, of one of the members of the Society from Denver to the effect that he practically never saw a case of atrophic rhinitis in that city. In New Orleans, on the contrary, the speaker saw more of this condition than of any other. Dr. Cocks' investigation showed why this should be the case. He could bear out Dr. Freudenthal's contention with reference to these patients with atrophic rhinitis complaining of lack of air. He had formerly thought that when patients

complained of inability to breathe through the nose he would find hypertrophic rhinitis; now, however, he was equally prepared to find atrophic rhinitis.

DR. GEORGE F. COTT, Buffalo, N. Y., called attention to a forthcoming article in the *Annals* which would bear upon the subject under discussion. Dr. Cocks did not state whether the air used in the experiments was pure or contaminated. The air one ordinarily breathed was contaminated. Experiments with the air from schools in Brooklyn. There had been collected five pails of dust in five days from the air the children breathed. This was a powerful factor in determining the results.

DR. THOMAS J. GALLAHER, Denver, Colo., believed that among the rhinologists of Denver it was the consensus of opinion that cases of atrophic rhinitis developing there were seldom encountered. The vast majority of cases seen there were in people who had lived in a low, moist climate and in whom atrophic rhinitis had already developed before coming to Colorado. Subjects of atrophic rhinitis were more uncomfortable in Denver owing to the diminution of the humidity of the air. The turbinate bodies must throw out more fluid and their inability to do so resulted in an increase of crust formation. However, he had seen many cases of vasomotor rhinitis develop in the high and dry climate. The cause of this was not yet known and the disease was peculiarly rebellious. It was certainly not due to the flora in different altitudes as it occurred throughout the year without any amelioration, the patient remaining in the same place. He had seen remarkable results from sending the patients to the sea shore. The effect was very complex but the good results probably came through the local influence of the air upon the nasal membrane plus the general effect upon the blood vessels and nervous system..

DR. ROBERT LEVY, Denver, Colo., did not believe atrophic rhinitis occurred rarely in Denver. It was mainly a disease originating in childhood. The cause was still in doubt. As a matter of fact, children with atrophic rhinitis were found in Denver, but, in his experience, the condition was not confined to children. It was more common in children than hypertrophic rhinitis. His clinical assistant, Dr. Cooper, was making a study of cases of atrophic rhinitis in children and adults, and he had enough cases to make a presentable showing. He had seen enough cases in the clinic alone, aside from those in private practice, to warrant his going on with the study. It was not, however, as frequently found in Denver as elsewhere.

DR. COCKS, in closing the discussion, answered Dr. Cott's question in regard to dust by stating that in his opinion, the results of the tests made in the experimental chamber were not influenced by contamination with a dusty atmosphere. The physical conditions in the experimental chambers were practically ideal. Nobody was allowed in the rooms except the observers and the subjects of the experiments.

Hemi-Laryngectomy for Malignant Diseases, Description of New Operation with Report of Six Cases, all Recovered. JOHN E. MACKENTY.

The author presented a method by which he endeavors to make the closed operation as safe as the open one, without the difficulties and

defects of the latter. Femi-laryngectomy stands midway between total laryngectomy and thyrotomy as a surgical choice. Thyrotomy takes the early cases of laryngeal cancer, hemi-laryngectomy the later ones and total resection the latest (or, as one might better say, the too late) ones. The statistics of recurrence are in corresponding ratio, thyrotomy leading and total laryngectomy bringing up a sorry rear. Gluck's method of hemi-laryngectomy is a roundabout and tedious one, and has furthermore the disadvantages of permitting wound secretions readily to enter the trachea, and of giving some trouble later in converting the fissure into a potential tube. Yet a primary closure of the larynx without some way of safeguarding the trachea against wound secretion would be a grave surgical blunder. These considerations therefore prompted the author to attempt a modification in the accepted technic.

Operation: The larynx should be first opened for inspection, if there is a question as to whether thyrotomy or hemi-laryngectomy is indicated. Then, if hemi-laryngectomy is elected, the trachea is opened just above the sternal notch. One incision is made for the laryngectomy and another for the tracheotomy. The first incision begins well up under the chin and extends to a point just below the cricoid ring in the center line. This is deepened until the thyro-hyoid membrane, the thyroid and the cricoid cartilages are exposed. Care is taken not to separate the tissues laterally. The larynx is then opened in the center line, its interior cocaineized and inspected. Blunt hooks or retractors are used in order to avoid injury to the edges of the cartilage, especially on the healthy side.

The trachea is next opened as low as possible. The second incision is here made over the end of the sternal notch and up to within one inch, or more if possible, of the first incision, leaving a liberal bridge of tissue between the two incisions. The trachea is opened and a large tracheal cannula inserted. Into this is fitted a rubber tube, eighteen inches long, through which the anesthetic is continued. Before inserting the tracheal cannula, two stout silk threads are passed through the edges of the tracheal incision, one on each side, and laid one on each side of the neck. The wound is then closed fairly close up to the cannula. The object of the silk threads is to control the tracheal opening in case the tube should get displaced or come out. Traction on these threads opens the trachea. This precaution should always be taken in low tracheotomies.

The larynx is again opened with blunt hooks or narrow retractors. The trachea is cocaineized and loosely packed with gauze. The patient is placed in a semi-Trendelenburg position. The skin, cervical fascia, and pre-tracheal muscles covering the diseased half of the larynx are carefully dissected away from the cartilage, taking care to keep them all in one flap and not to injure the inner surface, which is composed of the pre-tracheal muscles, as this surface is to form the new laryngeal wall. This flap is gently held away while the removal of half of the larynx proceeds. The thyro-hyoid membrane is slit laterally and the trachea divided below the cricoid ring on the diseased side. Iodoform gauze is packed into the pharynx, and is removed through the mouth when the

operation is near completion. The loosened half of the larynx is now retracted, well away from the centre line. If the mucous membrane over the posterior commissure and arytenoid is healthy, it is saved and lifted away from the cartilage beneath. This mucous membrane dissection is carried backwards over the posterior surface of the arytenoid and down towards, and sometimes into, the anterior aspect of the mouth of the oesophagus.

The diseased half of the larynx is now removed in the usual way being careful to save the mucous membrane flap outlined above. All bleeding points are controlled by catching only the vessels and by tying with an 00 iodized catgut. Careful hemostasis and gentle treatment of the tissues are required.

As much as possible of the raw surface left by the hemi-laryngectomy must now be covered with mucous membrane. The above mentioned flap is brought downward and inward. Care should be taken to avoid tension in stitching the flap in its new position with fine, iodized gut. The tracheal packing is now removed and the trachea cleared of blood clot down to the cannula. A long strip of vaselined gauze, thoroughly impregnated with bismuth, is packed into the trachea. The end of the strip is brought out at the lower end of the laryngeal incision. The larynx is packed loosely with a strip of iodoform gauze, the end of which is brought out at the same point as the tracheal packing. The gauze in the pharynx is removed through the mouth and the feeding tube is pushed through the nose and directed into the oesophagus.

The mesial edge of the pre-tracheal muscles is now united to the mucous membrane of the healthy side of the larynx along its anterior median aspect, using fine iodized gut. The skin edges are united with silkworm gut. The wound is left open at its lower angle, wide enough to give drainage soon for the gauze ends. Two provisional stitches are placed here to be tied after those strips are removed, thus entirely closing the larynx. A sheet of rubber tissue, covered on both sides with gauze, is glued by its edges with collodion to the neck, across the bridge of skin separating the two wounds. This attachment should extend laterally one half way around the neck to keep the drainage of the laryngeal wound from the tracheal cannula.

As after treatment Dr. MacKenty prescribed a diet of oatmeal thoroughly cooked and strained mixed with milk, milk-sugar or raw egg and occasionally with melted butter. Six ounces of this mixture is forced through the oesophageal tube with a piston syringe every four hours, followed by four ounces of water.

To clear the trachea of secretion, suction is used as needed. A small catheter is passed down to the bifurcation and about ten pounds of negative pressure is applied. Dressings should be changed every few hours. The laryngeal drain should be kept in as long as the serous flow continues. The tracheal plug may remain from three to five days. The tracheal cannula should be removed just as soon as the new larynx is open for comfortable breathing.

DISCUSSION.

DR. JOHN F. BARNHILL, Indianapolis, Ind., thought the method described would undoubtedly prove advantageous in the very early cases

in which it was possible to make a diagnosis. The new feature of the method was the forming of a cavity lined by mucous membrane. This, of course, would presuppose the presence of good membrane to be used for this purpose. For this reason the method was applicable only in cases in which the disease was not very extensive. If Dr. McKenty had not had six recoveries in his six cases he would have been open to the criticism that he should have done laryngectomy. Semon, Butlin, and others who had done a great deal of this work had reported better results with laryngectomy than with hemi-laryngectomy. With the modern methods for keeping the secretions out of the larynx it was possible to do more than might be done otherwise. Crile, who had done a good deal of this work, advised doing two operations, the first being a low tracheotomy, for the purpose of getting the patient accustomed to the tube. In Dr. McKenty's method that was not necessary, as he succeeded in keeping the secretions out of the trachea, so that there was no danger of the fluid dissecting its way down into the mediastinum, as happened in many cases. He asked if there had been stricture in any of Dr. McKenty's cases. In case there was not enough mucous membrane to cover the wound there might be stricture after removal of the tube.

DR. MACKENTY, in closing the discussion, said one case had refused total laryngectomy. He had not had any post-operative strictures. He did not think the Semon operation applicable in any of his cases. He got enough mucous membrane to cover one-quarter or one-third of the wound in most of the cases, as he had stated in the description of the operation. He was opposed to the two-stage operation. It was not done abroad, and he did not see why it had to be done here. In going in for the second operation it was necessary to go through a septic field. In total laryngectomy he believed in the complete operation, i. e., with the gland bearing tissues of the neck. In one case there was a fairly tight point below the larynx, because he had to do more than a hemi-laryngectomy. Moreover, the patient had a distorted trachea from the enlarged thyroid. Answering the question about the perichondrium, he had always taken the mucous membrane without perichondrium.

Cleft Palate and Hare-Lip. OWEN SMITH.

Careful study of the operative technic for cleft palate reveals three distinct methods with minor modifications:

- (1) Elevation or separation of the soft tissues of the palate, and suturing the denuded edges in the middle line, as advocated by Langenbeck and Warren;
- (2) Flap elevation, reflection or rotation, as advised by Lane;
- (3) Forcible closing together of the cleft by lateral pressure and retaining the parts in place by heavy metal sutures, as suggested by Brophy.

Having operated upon more than two hundred cases, and having carefully tried all three plans, the essayist unreservedly commended the second method, suggested by Lane. The most important reason for an early operation is that a large number of these patients die before they reach the age when they would be ready for operation by the older methods. His own experience leads him to the belief that fifty or sixty

per cent die of inanition within the first six or eight months of infancy, if the cleft is not closed. The mortality from early operation by the older surgeons was so great that they were forced to abandon it. In contradistinction, Lane and Brophy did not have any large percentage of deaths from their work, and in his own series by their methods he had not had a fatality. The sooner after birth the operation is performed, the less hemorrhage, while the shock to the nervous system will be very slight. The muscles of the throat after the early operation begin their activity at once and do not have time to atrophy. This atrophy takes place where the operation is delayed and the Eustachian tube suffers from this disuse of the muscles. The early formation of a fibrous band between the edges of the cleft by contraction begins at once to mould the twisted face into its proper position. Before the teeth erupt an opportunity is offered to get a wider flap by extending the incision outside of the alveolus. The immediate repair of the lip adds another factor in restoring the palatal processes to their normal place. Lane's operation is designed to bridge over the cleft by means of mucoperiosteal flaps from the bony palate in front of the mucous membrane and submucous tissue from the muscular or soft palate behind. Flaps properly formed when placed in position over the cleft present their raw surfaces together, one overlapping the other. Fine silk sutures are used, and when tied they unite the flaps in this way and form a new, strong and complete palate. It has been the essayist's practice, in order to hasten the healing, to curette the ulcerated free border of the septum, often found at birth, and to dissect up the mucous membrane on both sides, until material enough is obtained for a flap, which is pulled down and sutured over the free edge of the curetted septum. It is never safe to operate while the ulcer is present. For some time he has thought it wiser to divide the operation into two sittings, particularly if the cleft is very wide. The technic is described in detail.

The hare-lip operation employed by the essayist is designated as the lip-splitting method. In this operation there is no sacrifice of tissue and the lip may be operated upon as many times as necessary until the desired effect is obtained.

DISCUSSION.

DR. JOHN EDMUND MACKENTY, New York City, said Dr. Smith had improved upon the Lane operation. The objection he had had to the Lane operation was that it called for the splitting of the soft palate into two parts more or less completely ruining it as a functioning organ. He would try out Dr. Smith's method in future. He had never done a hare-lip operation without undermining the tissues of the lip so as to relieve tension at the edges. It was not quite clear to him that tension would be relieved by Dr. Smith's method. It had not been his experience that such a large percentage of cleft-palate patients died. He would like to hear more about the speech results in the Smith method, and it was to be hoped that Dr. Smith, in future papers, would tell of the speech results in his cases. He had used an obturator in the mouth to prevent tongue pressure, and had obtained better results when he did this. Most of his operations had been done by a modification of the Langenbeck method.

Dr. MacKenty presented a model of his obturator.

DR. TRUMAN W. BROPHY, Chicago, said there were so many varieties of defect that it was difficult to discuss a paper on this subject. He classified hare-lip under thirteen forms, and cleft-palate under fifteen forms. He presented charts showing illustrations of the various forms. In discussing cleft palate it was necessary to consider the different kinds, because there were nearly as many different kinds of treatment as there were congenital defects. The object in operating upon the palate was two-fold: First, to overcome the congenital deformity, to restore the parts just as nearly as possible to normality; second, to correct the condition so as to enable the patient to speak properly when the age of speech was reached. The surgeon who failed to accomplish this failed to attain success. A cleft palate was like an open wound. A surgeon would not make a patient wait before closing an ordinary open wound, and yet many surgeons made patients wait for years before closing a cleft palate.

Lantern-slide illustrations of different forms of defect were shown, and a description of his technic for each, with the reasons for the same, were given.

DR. GEORGE L. RICHARDS, Fall River, Mass., said in justice to Dr. Smith's method, that he had a case under observation which corresponded to Dr. Brophy's form XLII. The patient had a good lip, a good palate, and was developing a very good voice. One would hardly know the patient was not a normal individual.

DR. SMITH, in closing the discussion, did not dispute Dr. Brophy's ability to do anything with wires. In order to pass a verdict upon the two operations, one should try both. Every case in which he had employed the Brophy operation had been an absolute failure. Dr. Brophy obtained the desired object by one method, he obtained it by another. He had no desire to criticise the Brophy operation. In the method described there was an immediate formation of fibrous tissue which drew the parts together, if taken early enough. One could obtain any desired length of palate by taking a little care in placing the flaps before beginning the sutures.

Some Observations on Turning Nystagmus. GEORGE W. MACKENZIE.

The author's investigation covering a period of eight years (1906 to 1914) have resulted in findings contradictory to those of Barany on after-turning nystagmus. He believes the observations of the latter have been faulty because of inaccurate technic, and also that the wide discrepancies in the duration of after-turning nystagmus in normal individuals, claimed by Barany, do not exist. Hence the author concludes that the hearing test is a valuable one in the diagnosis of labyrinthine conditions.

The author examined one hundred and seventeen cases in all, including nine normal individuals. The list included nearly all of the varieties of ear diseases to be met with in the average practice. They differed from Barany's in the following particulars.

In normals, Barany found the average duration of horizontal after-nystagmus to the right after ten turns to the left was forty-one seconds. The author found that the average duration of horizontal after-nystagmus

to the right after ten turns to the left was a fraction of a second less than twenty-four seconds. Barany found that the average duration of horizontal after-nystagmus to the left after ten turns to the right was thirty-nine seconds, and the author found that it was only twenty-four seconds. Barany: The maximum duration for horizontal after-nystagmus to the right after ten turns to the left was ninety-eight seconds; the author: twenty-nine seconds. Barany: The maximum duration for horizontal after-nystagmus to the left after ten turns to the right was one hundred and twenty seconds; the author: thirty-one seconds. Barany mentions one case with no nystagmus after ten turns and uses this as his minimum for after-turning nystagmus. The author observed two cases with apparently no nystagmus, but upon repeating the test and turning the patient at a more rapid speed, and examining carefully, he was able to note and time the nystagmus when it was found to be of relatively short excursions and lasted the usual length of time. Barany observed horizontal after-nystagmus averaging forty seconds in sixty individuals examined on different days. The maximum was eighty seconds; minimum, twenty-five seconds. One fifth of the cases showed consistently the same findings; in other words, four fifths showed variable findings. The author examined a smaller number of such cases and found the average after ten turns for horizontal after-nystagmus to equal about twenty-four seconds. The greatest variations were but a few seconds and these could readily have been explained on the ground of faulty observations. In a number of cases in which Barany tried both rapid and slow turnings, he has found that after ten rapid turns the nystagmus lasted from eighteen to nineteen seconds, while after slow turns it lasted from twenty-six to thirty seconds. In one half the cases he found the rapid turns produced a longer after-nystagmus than slower turns. The author tried patients with both rapid and slow turnings with the result that the duration is apparently less after slow than after rapid turns and consistently so. However, most careful tests will show them to be about equal in duration. The difference is more apparent than real for the reason that after slow turning the nystagmus is less intensive than after rapid turning, hence less noticeable and more difficult to determine the moment of cessation. Barany claims that with a great number of persons the horizontal nystagmus after twenty, thirty, forty, fifty and sixty turns was the same as after ten turns, adding that it appears that in the average ten turns show the *Hochster Werte* (highest worth, value or rate) while with a greater or less number of turns the amount diminishes. The author admits that he is not in the position to match Barany in material, but he performed some auto-experiments of this kind and found the nystagmus to increase consistently in duration between ten and twenty turns. He found, furthermore, less variations after twenty than after ten turns. Barany claims that the amount of after-turning nystagmus after twenty turns is about equal to that after five turns. The author never found this to be true in a single case in his experience. Barany claims that after twenty or more turns there appears not infrequently, a *nach-nach* nystagmus (after-after nystagmus) in the direction opposite to the after-nystagmus lasting sometimes a minute. The author has never seen an after-after

nystagmus in many hundred examinations including those in his list. He does not believe it exists and will not believe it until it is shown to him. Concerning dancers Barany claims that with those who habitually turn to the right the duration of the horizontal turning nystagmus to the left falls considerably shorter than that to the right. The author was fortunate enough to obtain a whirling dervisher with the stage name of Hash Hash who was a left turner. The author examined him on many occasions and found that his duration of nystagmus was consistently the same on several occasions. The figures were reduced for both horizontal and rotatory nystagmus to both sides and more so to the right. This one case supports the claims of Barany.

The author further pointed out that Barany in his efforts to find a relationship between the semi-circular canals and the eye-muscles neglected a certain caution that he himself warns against when he advises the use of opaque glasses in studying horizontal after-turning nystagmus. The author attributed Barany's irregular findings as compared to his own, as due to his technic, which the author believed faulty, rather than to actual irregularities in the behavior of the reflexes.

In Barany's "Table for Differential Diagnosis of Mentioned Diseases," page 276 of the Proceedings of the Ninth International Otological Congress, he indicated with arrows the direction of spontaneous nystagmus in the column, suppuration of the right labyrinth since twenty-one days, and elsewhere states that the patient has spontaneous nystagmus to the right as well as to the left. The author remarked that this nystagmus to the right, when looking to the right, is not in the least way connected with the patient's labyrinthine condition, and that Barany has included it among other findings in labyrinthine suppuration only supports the author's previous contention that Barany lays more stress upon the side position than the straight forward position of the visual axis. In Barany's table there is no mention made of his having noted the spontaneous nystagmus that occurs when looking straight ahead, while the author considered no other nystagmus of any value from the standpoint of the semi-circular canals. When the intensity of the nystagmus does not balance in opposite directions, the author accepts it as pathological and the problem then is the isolation of the particular muscle or muscles involved.

BOOK REVIEWS.

Peroral Endoscopy and Laryngeal Surgery. CHEVALIER JACKSON, M. D., Professor of Laryngology, University of Pittsburg, Laryngologist Presbyterian Hospital, Eye and Ear Hospital, Consulting Laryngologist, Bronchoscopist, Esophagoscopist and Gastroscopist, Western Pennsylvania Hospital and Western Pennsylvania Hospital for the Insane, Pittsburg Hospital for Children, etc., etc. Six colored plates and 490 illustrations. THE LARYNGOSCOPE, St. Louis, 1915.

Eight years ago Jackson published his first work on bronchoscopy and esophagoscopy. This was a book of some two hundred pages. It is now supplemented by a volume of seven hundred pages on the same subject, but bearing a slightly different title. In the time which has elapsed between the two publications Jackson probably has had a larger experience in this line of work than any other man. Such is the demand for his skill that he devotes himself entirely to this special branch of laryngology.

The book begins with a touching dedication to his father and mother. It would be splendid if one or both of his parents were alive to read it. The book is divided into two parts. The first part dealing with bronchoscopy, esophagoscopy and gastroscopy, takes up twenty-five chapters, whereas the second part which deals with laryngeal surgery consists of ten. Chapter eight on suspension laryngoscopy is written by Killian. The book has an extended bibliography. It is well printed and the paper is excellent. There are six colored plates and 490 illustrations. The plates are drawn by the author and most of the illustrations are his work also. Both are most excellent from the artistic and the medical standpoint.

The volume is essentially clinical, and is easily the best one that we have. It is crammed with information, and must be read and re-read in order to be assimilated. The wealth of suggestion will make it a reference book for years.

The best chapter is the one dealing with the mechanical problems of foreign body extraction. This is extremely practical and brilliant. Next in order of excellence comes the wonderful table of foreign bodies which the author has removed, and after this I should place the concise chapters on laryngeal surgery, especially the chapter on tracheotomy.

In his preface the author has to a great extent disarmed criticism on two points where some criticism is warranted, namely, his English and the tone of finality which creeps in a few times. The piling of adjective upon adjective is harsh. There is a tendency to make phrases of the headline type, for example, the phrase the "high-low method of examination." The first portion of the book would be improved by condensation. One wonders a bit if so many rules are always necessary.

The positive tone appears in the discussion of anaesthetics. One of Jackson's greatest contributions to bronchoscopy is his demonstration that in very many cases no anaesthetic is necessary. He always examines the larynx of children without an anaesthetic, and almost all his foreign bodies whether in the trachea, bronchi, or esophagus are removed in the same way. The profession did not believe this possible until he proved it and he will always be remembered for the achievement. His discussion of the question, however, leaves the reader with the impression that an anaesthetic is dangerous, especially chloroform anaesthesia, in esophageal cases. I have had no experience with chloroform anaesthesia, but have had a considerable experience in working in the esophagus with the patient etherized, and this has not led to disaster. The routine examination of the esophagus with local anaesthesia of the

pharynx and small tubes does not appeal to me. Large tubes and a distended esophagus give the best examination and allow the fullest manipulation. In order to distend the esophagus it is necessary to balloon it, preferably using a foot bellows. Jackson mentions ballooning, but makes nothing of it. He speaks of the difficulty of finding the opening of the esophagus in pouch cases. Ballooning makes this comparatively easy. I formerly had great difficulty in finding the opening into the stomach in cases of advanced cardio-spasm, but since I have used ballooning the difficulty has disappeared. I feel that next in importance to the gastroscope itself in making a thorough examination of the esophagus, is ballooning under ether.

If anything could upset Dr. Jackson's self control it would be the word cardio-spasm. I regret, therefore, to be compelled to use it. He pleads for a practical sphincter at the beginning of the esophagus but argues against one at the lower end where the esophagus merges into the cardiac end of the stomach. He maintains this in spite of the fact that the pylorus is a sphincter, that there is an anal sphincter, and, in spite of the fact that it has been proved lately that the ilio-caecal valve acts as a sphincter. Fluoroscopic examination apparently shows that the cardiac end of the stomach acts like the other sphincters of the alimentary canal. Nature is not fond of exceptions. There is much evidence, therefore, to show that the cardia acts like a sphincter.

Jackson says but little of webs at the upper end of the esophagus. This is natural because local anaesthesia and small tubes would not discover them.

The delicate matter of giving credit has been managed by adding a full bibliography. The use of the caliper guide is credited to Boyce, but Brünings figures the same instrument and uses it for the same purpose as Jackson.

For some years I have felt that the next advance in bronchoscopy should be in diagnosing and treating diseases of the trachea and bronchi. There are energetic workers in this field but the results have been comparatively small. In Jackson's chapter which deals with this subject he has added a new and important procedure. What he has to say about patients drowning in their own secretions unless relieved by the timely introduction of the bronchoscope is new and most important. I was proud to find that Jackson makes no mention of the removal of diphtheretic casts from the trachea and bronchi by means of the bronchoscope. This feeling springs from the fact that to find anything that Jackson has not done is a distinction. In conjunction with Dr. Place I have had two such cases, one of which resulted in recovery. It is a simple and life-saving manipulation which should come into frequent use in hospitals for contagious diseases.

The short chapter on gastroscopy gives the impression that it has not advanced much in eight years. One finds also that in this time the lens gastroscope has become a strong rival of the gastroscope of Jackson.

To conclude: Jackson's book presents great achievement. He has demonstrated the success of the four and five millimeter tubes in infants, and has forced a revision of the practice of using anaesthetics. No one doing bronchoscopy or esophagoscopy is fully prepared for his cases unless he has first availed himself of Jackson's rich experience.

MOSHER.

A Manual of Diseases of the Nose, Throat and Ear. By E. B. Gleason, M.D., LL.D., Professor of Otology in the Medico-Chirurgical College; Aurist to the Medico-Chirurgical Hospital; Surgeon-in-charge of the Nose, Throat and Ear Department of the Northern Dispensary, etc. Illustrated; third edition, thoroughly revised. Philadelphia and London: W. B. Saunders Co., 1915.

One of the outstanding features of this manual is its distinctive individuality and in this age of book writing a book ought not to be written or published unless it possesses this quality. It must be confessed that

there is an overabundance of text-books, handbooks and manuals published in every department of medicine and few of them have any distinctive features to recommend them. An exhaustive work that can be used for purposes of authoritative reference will always have its place and there are not too many of such works. Smaller works, presenting the subjects that they treat of in a concise way are mere duplications of one another unless each author instills into his text the fruit of his individual experience and the results of his own work and innovations. Then such a work is worth while. Unfortunately, not all books fulfill this essential condition. Gleason's does. It is true that some of his operative procedures have not met with universal acceptance, but that makes no difference. He presents his own methods and he does not neglect the methods of others. This is especially evident in the chapter on the nasal septum where, of course, the author lays more stress on his own method of operation for septal deflections. But sufficient space is given to Kyle's method and the submucous resection of the septum which to-day is the operation of choice. Very characteristic of the author is his impartiality in discussing the advantages and disadvantages of different operative procedures.

The book covers the subject admirably and is well arranged. The operation of tonsillectomy is described fully. The subjects of mastoiditis, mastoid operations, otosclerosis, the labyrinth, etc., are all treated sufficiently. Another commendable feature of the book is that the instruments shown in the illustrations are all of modern type so that the student is introduced to up-to-date instruments and not, as is the case in some books, to antiquated affairs which no one uses any longer.

P. F.

Radiography, X-Ray Therapeutics and Radium Therapy. By Robert Knox, M.D., M.R.C.S., L.R.C.P., Hon. Radiographer, King's College Hospital, London; Director, Electrical and Radiotherapeutic Department Cancer Hospital, London; Hon. Radiographer, Great Northern Central Hospital, London, etc. With 64 plates, a frontispiece in color and 246 illustrations in the text. London: A. & C. Black, 1915.

The book is divided into two sections. Part I deals with radiography: X-ray tubes and accessory apparatus, production of the radiograph, stereoscopic radiography, localization of foreign bodies, radiography of normal bones and joints, injuries and differential diagnosis in diseases of bones and joints, x-ray examination of the thorax, of the alimentary system and of the urinary tract. Part II deals with (a) X-ray therapeutics, (b) Radium therapy and (c) Combined radium and x-rays in malignant disease.

The portion of Part I of interest to oto-laryngologists is that devoted to radiography of the skull (mastoid region) and accessory sinuses. The technique considered here and given in full comprises (1) radiography of the sella turcica, (2) examination of the frontal sinuses, (3) examination of the sphenoidal and ethmoidal sinuses and the turbinate bones, (4) examination of the lower jaw and (5) examination of the mouth. The question of the localization of foreign bodies in the trachea and bronchi is given scant attention, more attention being paid to Roentgenography in general in thoracic disease.

In Part II mention is made of the use of radium in diseases of the ear, nose and throat. In regard to the radium treatment of deafness the author states that "a considerable experience of the action of both x-rays and radium leads one to state that the percentage of cases which show any definite improvement is remarkably small." As a whole, the book contains a good deal of valuable information for the professional Roentgenologist and will prove of great practical service, from its directions of technic, to the practitioner doing his own x-ray work.

P. F.

